



3058 Research Drive
State College, Pennsylvania 16801 USA
Telephone: 814.272.1039
Fax: 814.272.1019

Analytical Report

Fluorochemical Characterization of Aqueous Samples

Local Landfill C8 Sampling 03/08

MPI Research Laboratory Report No. L0013938

Testing Laboratory

MPI Research, Inc.
3058 Research Drive
State College, PA 16801

Requester

Michael D. Aucoin
URS Corporation
Barley Mill Plaza
Bldg 19 Room 2118
Lancaster Pike and Rt 141
Wilmington, DE 19805

1 *Introduction*

Results are reported for the analysis of water samples received by MPI Research, Inc. from DuPont Corporation. This report presents results assigned to MPI Research study number L0013938.

Specific fluorochemical characterization by liquid chromatography / tandem mass spectrometry (LC/MS/MS) was requested for these samples. A total of 5 samples were received for analysis.

The samples were prepared and analyzed by LC/MS/MS for the following list of fluorochemicals:

- Table 1: Target Analysis

Compound Name	Acronym
Ammonium Perfluorooctanoate	APFO
Perfluorooctanoic Acid	PFOA

2 *Sample Receipt*

The samples were submitted in plastic containers, cooled with wet ice. The samples were collected on 03/05/08 and were received on 03/06/08. Chain-of-custody information is presented in Attachment C.

3 *Holding Times*

The analytical method used was validated against a maximum holding time of 14 days in water samples. The samples were analyzed within the required holding time.

4 *Methods - Analytical and Preparatory*

4.1 LC/MS/MS

4.1.1 Sample Preparation for LC/MS/MS Analysis

The water samples were initially treated with 200 μ L of 250 mg/mL sodium thiosulfate solution to remove residual chlorine. Solid phase extraction (SPE) was used to prepare the samples for LC/MS/MS analysis. A forty-milliliter portion of sample was transferred to a C₁₈ SPE cartridge. The cartridge was eluted with 5 mL of 40% methanol: water. The eluate was discarded. The cartridge was then eluted with 5 mL of 100% methanol. A 5 mL portion of methanol was collected for analysis by LC/MS/MS. This treatment resulted in an eight-fold concentration of the sample prior to analysis.

4.1.2 Sample Analysis by LC/MS/MS

An Agilent Technologies 1100 (HP) HPLC system coupled to a Micromass Ultima MS/MS was used to analyze the sample extracts. In order to verify mass accuracy, a calibration check is performed weekly on the mass spectrometer using a NaI/Rb/Cs tuning solution. All instrument calibration criteria were met for the analysis of the samples presented in this report. Analysis was performed using selected reaction monitoring (SRM). The samples were extracted on 03/07/08 and analyzed between 03/15/08 and 03/16/08. Raw analytical data can be found in Attachment D.

5 Analysis

5.1 Calibration

An 8-point calibration curve was analyzed at the beginning of the analytical sequence and throughout the run for the compounds of interest. The calibration points were prepared at 0.0050, 0.010, 0.025, 0.050, 0.10, 0.25, 0.50, and 1.0 ng/mL (ppb), as perfluorooctanoic acid (PFOA). The instrument response versus the concentration was plotted for each point. Using linear regression with $1/x$ weighting, the slope, y-intercept and correlation coefficient (r) and coefficient of determination (r^2) were determined. A calibration curve is acceptable if $r \geq 0.992$ ($r^2 \geq 0.985$).

Calibration standards for MS/MS analysis were prepared using the same SPE procedure used for the samples.

For the results reported here, calibration criteria were met.

5.2 Blanks

Extraction blanks were prepared and analyzed with every extraction batch of samples. The extraction blanks should not have any target analytes present at or above the limit of detection. For these samples, the extraction blank was compliant.

Instrument blanks in the form of clean methanol solvent were also analyzed after every high-level calibration standard, and after known high-level samples. Again, the blanks should not have any target analytes present at or above the limit of detection. For the samples presented here, the instrument blanks were compliant.

5.3 Surrogates

Surrogate spikes are not a component of the LC/MS/MS analytical method.

5.4 Matrix Spikes

A matrix spike was prepared for sample LCL-Z-Outlet 004 at 5.0 ng/mL. The matrix spike recovery was within the acceptable range of 70 – 130%. Matrix spike recoveries are given in Attachment B.

5.5 Duplicates

Sample LCL-Z-Outlet 004 was extracted in duplicate and analyzed. Results are given along with the sample results in Attachment A.

5.6 Laboratory Control Samples

Milliq water was spiked with PFOA at 0.050 and 0.50 ng/mL with each extraction set. All laboratory control samples showed recoveries between 70 and 130%.

5.7 Sample Related Comments

A single analytical run was performed to complete the sample analysis. The following is a brief quality control narrative for the run.

Analytical Run Number	Samples Analyzed	Comments
030708 D	LCL-Z-Outlet 101 LCL-K-EQBLK-2 LCL-Z-Outlet 004 LCL-Z-Outlet 005 LCL-Z-SS1	All quality control results were acceptable and all data are useable.

6 Data Summary

Please see Attachment A for a detailed listing of the analytical results. All results are reported in (ng/mL) parts per billion as APFO and PFOA.

7 Data/Sample Retention

Samples are disposed of one month after the report is issued unless otherwise specified. All electronic data is archived on retrievable media and hard copy reports are stored in data folders maintained by MPI.

8 Attachments

- 8.1 Attachment A: Results
- 8.2 Attachment B: Matrix Spike Recoveries
- 8.3 Attachment C: Chain of Custody
- 8.4 Attachment D: LC/MS/MS Raw Analytical Data
- 8.5 Attachment E: Standards Data

9 Signatures

Amy Sheehan 04/02/08
Amy Sheehan, Group Leader Date

Karen Risha 04/02/08
Karen Risha, Manager, Analytical Date

Other lab members contributing to data:

Mindy Cressley



3058 Research Drive
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Analytical Report

Analytical Results Local Landfill C8 Sampling 03/08

DuPont Sample Identification	APFO (ng/mL)	PFOA (ng/mL)
LCL-Z-Outlet 101	28	27
LCL-K-EQBLK-2	ND	ND
LCL-Z-Outlet 004	9.2	8.8
LCL-Z-Outlet 004 (laboratory duplicate)	8.8	8.5
LCL-Z-Outlet 005	8.2	7.9
LCL-Z-SS1	25	24

Limit of Detection (LOD) for the procedure is approximately 0.0022 ng/mL

Limit of Quantitation (LOQ) for the procedure is 0.011 ng/mL

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ



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Analytical Results Local Landfill C8 Sampling 03/08

DuPont Sample Identification	APFO (ng/mL)	PFOA (ng/mL)
LCL-Z-Outlet 101	28	27
LCL-K-EQBLK-2	ND	ND
LCL-Z-Outlet 004	9.0	8.7
LCL-Z-Outlet 005	8.2	7.9
LCL-Z-SS1	25	24

Limit of Detection (LOD) for the procedure is approximately 0.0022 ng/mL

Limit of Quantitation (LOQ) for the procedure is 0.011 ng/mL

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Attachment B: LC/MS/MS Laboratory Spike Recovery

Sample ID:

Spiked Amount (ng/mL):

	Sample Concentration (ng/mL)	Matrix Spike Result (ng/mL)	Matrix Spike Recovery (%)	Criteria (Pass / Fail)
PFOA	8.8	13	84	PASS

Lower Recovery Limit:

Upper Recovery Limit:

Concentrations represent amount present as the PFOA anion

Mattawan (Corporate Headquarters)
 54943 North Main Street
 Mattawan, MI 49071-9399
 (269) 668-3336 Phone
 (269) 668-4151 Fax

State College
 3058 Research Drive
 State College, PA 16801
 (814) 272-1039 Phone
 (814) 231-1580 Fax

Login

Login Group: L0013938

Login #:	14050	Conform COC Sample:	True
Project:	P0000418	Conform COC:	True
Company Name:	DuPont	Conform Sample:	True
Submitted By:	Michael D. Aucoin	Conform Request:	True
Login Type:	Immediate Receipt of Samples		
Started:	True		
Date Start:	03/06/2008		
Due Date:	03/16/2008		
Login Initiated*:	03/06/2008		

* Dates entered into "Login Initiated" field prior to 1/5/06 reflect dates of receipt. The field was formerly called "Received Date"

Received By: Ammerman, Mark

Spread Sample:

Label:

Oxygen SD/PI: Risha, Karen

Project Title/Type: Analysis of Fluorochemicals in Water / ROUTINE

Login Notes:

Packages / Containers

Package	Carton	Date / Condition		Shipper / ID	Temp. Control/Temp.	Direction / Handled By
'K0016358		Received Date: 3/6/08 10:03 Package & Contents Uncompromised		FEDEX 8598 1028 7195	Wet Ice 1.3	RECEIVED Ammerman, Mark
Container #	Gross Weight	pH	Container Type	Preservative	Mfg. Lot	Mfg. ID
C0309016	596.80 g	7.3	500 ml Clear Plastic Narrow	NONE		
C0309017	588.00 g	7.2	500 ml Clear Plastic Narrow	NONE		
C0309018	597.70 g	7.9	500 ml Clear Plastic Narrow	NONE		
C0309019	604.30 g	8.0	500 ml Clear Plastic Narrow	NONE		
C0309020	574.40 g	7.3	500 ml Clear Plastic Narrow	NONE		
C0309021	579.40 g	7.2	500 ml Clear Plastic Narrow	NONE		
C0309022	544.90 g	7.1	500 ml Clear Plastic Narrow	NONE		
C0309023	553.20 g	7.3	500 ml Clear Plastic Narrow	NONE		
C0309024	596.50 g	7.2	500 ml Clear Plastic Narrow	NONE		
C0309025	594.40 g	7.4	500 ml Clear Plastic Narrow	NONE		

0009

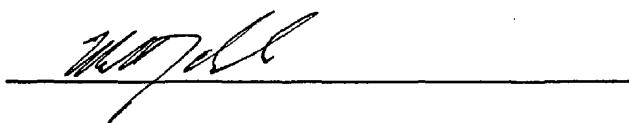


Login

Samples

<u>Sample ID</u>	<u>Container</u>	<u>Matrix</u>	<u>Fraction</u>	<u>Sample</u>	<u>Date Sampled</u>	<u>Date Due</u>
L0013938-0001	C0309016	LIQUID	Water	LCL-Z-Outlet 101	03/05/2008	03/16/2008
	C0309017					
L0013938-0002	C0309018	LIQUID	Water	LCL-K-EQBLK-2	03/05/2008	03/16/2008
	C0309019					
L0013938-0003	C0309020	LIQUID	Water	LCL-Z-Outlet 004	03/05/2008	03/16/2008
	C0309021					
L0013938-0004	C0309022	LIQUID	Water	LCL-Z-Outlet 005	03/05/2008	03/16/2008
	C0309023					
L0013938-0005	C0309024	LIQUID	Water	LCL-Z-SS1	03/05/2008	03/16/2008
	C0309025					

Login Reviewed By:



Date/Time:

3-7-08 0859

0010





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Exygen Contact: _____

Send Report To:

Company: ADAM N Services Dept

Address: _____

City, State, ZIP: _____

Attention: Mike Ascan

Phone #: _____

Fax #: _____

Email: _____

Study/Job #: C Sampling 3/08

Signature/Date: Rob Cunningham 3-5-08

Printed Name: ROB CUNNINGHAM

Turnaround time (TAT) requirements:

Results Due Date: _____

Preliminary Results Format: Verbal Email Fax

Report Due Date: _____

Storage conditions

- Room temperature
- Refrigerator
- Freezer
- Ultra-Low freezer
- Desiccated
- Lighting required

Stability (°C/%RH): _____

Stability time period: _____

Safety information

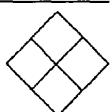
Special handling: _____

MSDS attached

Controlled substance: _____

HAZARDS:

Please fill in the diamond
HMIS/NFPA (0-4)
if appropriate



	Client ID# Description	Lot/ Control #	Amt. Sent/ Weight	# of Bottles	Matrix	Date & Time	Tests Requested
1	LCL-Z-outlet 101		500ml	2	water	3-5-08 14:47	PFM/LAP/PP LCL/water 23/7.2
2	LCL-K-EA8UK-2		500ml	2	-	3-5-08 15:00	" 7.9/8.0
3							
4							
5							
6							
7							
8							
9							
10							

PO#:	Quote Reference #:
A signed quote or a PO# is required before project initiation.	

Notes: _____

Relinquished by	Date	Time	Received by	Date	Time
Rob Cunningham	3-5-08	17:00		9/6/08	10:3

0011



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Exygen Contact: _____

Send Report To:

Company: Adam Al Servier-Deyo

Address: _____

City, State, ZIP: _____

Attention: Mike Ascan

Phone #: _____

Fax #: _____

Email: _____

Study/Job #: CE Sampling 3/08

Signature/Date: Rob Cunningham 3-5-08

Printed Name: ROB CUNNINGHAM

Turnaround time (TAT) requirements:

Results Due Date: _____

Preliminary Results Format: Verbal Email Fax

Report Due Date: _____

Storage conditions

- Room temperature
- Refrigerator
- Freezer
- Ultra-Low freezer
- Desiccated
- Lighting required

Stability (°C/%RH): _____

Stability time period: _____

Safety information

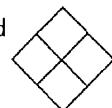
Special handling: _____

MSDS attached

Controlled substance: _____

HAZARDS: _____

Please fill in the diamond
HMIS/NFPA (0-4)
if appropriate



	Client ID# Description	Lot/ Control #	Amt. Sent/ Weight	# of Bottles	Matrix	Date & Time	Tests Requested
1	OUTLET LCL-2-004 Re		500 ml	2	water	3-5-08 14:12	PEAK/PK color/col
2							
3							
4							
5							
6							
7							
8							
9							
10							

PO#:	Quote Reference #:
A signed quote or a PO# is required before project initiation.	

Notes: _____

Relinquished by	Date	Time	Received by	Date	Time
<u>Rob Cunningham</u>	3-5-08	17:00	<u>glacier</u>	<u>glacier</u>	<u>10:03</u>

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Exygen Contact:

Send Report To:

Company: ADAM AP Services-Dept

Address: _____

City, State, ZIP: _____

Attention: Mike Ascom

Phone #: _____

Fax #: _____

Email: _____

Study/Job #: CE Sampling 3/08

Signature/Date: Rob Cunningham 3-5-08

Printed Name: ROB CUNNINGHAM

Turnaround time (TAT) requirements:

Results Due Date: _____

Preliminary Results Format: Verbal Email Fax

Report Due Date: _____

Storage conditions

- Room temperature
- Refrigerator
- Freezer
- Ultra-Low freezer
- Desiccated
- Lighting required

Stability (°C/%RH): _____

Stability time period: _____

Safety information

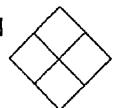
Special handling: _____

MSDS attached

Controlled substance: _____

HAZARDS: _____

Please fill in the diamond
HMIS/NFPA (0-4)
if appropriate



	Client ID# Description	Lot/ Control #	Amt. Sent/ Weight	# of Bottles	Matrix	Date & Time	Tests Requested
1	OUTLET <u>LCL-2-05005</u> RC		500ml	2 note	3-5-08 14:25	PFPA 1/1000 Color/lnr	7.1 7.3
2							
3							
4							
5							
6							
7							
8							
9							
10							

PO#: _____ Quote Reference #: _____

A signed quote or a PO# is required
before project initiation.

Notes: _____

0013

Relinquished by	Date	Time	Received by	Date	Time
<u>Rob Cunningham</u>	3-5-08	17:00	<u>esfector</u>	10/3	



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Company: ADAM AP Service Dept

Address: _____

City, State, ZIP: _____

Attention: Mik Ascom

Phone #: _____

Fax #: _____

Email: _____

Study/Job #: C8 Sampling 3/08

Signature/Date: Rob Cunningham 3-5-08

Printed Name: ROB CUNNINGHAM

Turnaround time (TAT) requirements:

Results Due Date: _____

Preliminary Results Format: Verbal Email Fax

Report Due Date: _____

Storage conditions

- Room temperature
- Refrigerator
- Freezer
- Ultra-Low freezer
- Desiccated
- Lighting required

Stability (°C/%RH): _____

Stability time period: _____

Safety information

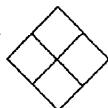
Special handling: _____

MSDS attached

Controlled substance: _____

HAZARDS: _____

Please fill in the diamond
HMIS/NFPA (0-4)
if appropriate



	Client ID# Description	Lot/ Control #	Amt. Sent/ Weight	# of Bottles	Matrix	Date & Time	Tests Requested
1	LCL-2-551		500 ml	2	water	3-5-08 13:55	PFOT/APG Color/frag 1.1 M
2							
3							
4							
5							
6							
7							
8							
9							
10							

PO#	Quote Reference #
A signed quote or a PO# is required before project initiation.	

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Relinquished by	Date	Time	Received by	Date	Time
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8598 1028 7195

0200

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1 From

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1 FedEx Priority Overnight
Next business morning. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.5 FedEx Standard Overnight
Next business shipment.* Saturday Delivery NOT available.6 FedEx First Overnight
Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

Packages up to 150 lbs.

7 FedEx 2Day
Second business day. Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.8 FedEx Express Saver
Third business day.* Saturday Delivery NOT available.
FedEx Envelope rate not available. Minimum charge: One-pound rate.9 FedEx 2Day Freight
Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

Packages over 150 lbs.

10 FedEx 3Day Freight
Third business day.* Saturday Delivery NOT available.11 FedEx 3Day Freight
Third business day.* Saturday Delivery NOT available.

* Call for Confirmation:

* To most locations.

5 Packaging

12 FedEx Envelope*13 FedEx Pak*
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* Declared value limit \$500.

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19 No 20 Yes
One box must be checked.
As per attached Shipper's Declaration.21 Yes
Shipper's Declaration not required.22 Dry Ice
Dry Ico, 9, UN 1845 kg
Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

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23 Sender
Acct. No. in box will be billed24 Recipient
3 Third Party4 Credit Card5 Cash/Check

Obtain Recip. Acct. No.

25 Total Packages26 Total Weight27 Total Charges28 Credit Card Auth

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29 No Signature Required
Package may be left without obtaining a signature for delivery.
Fee applies.30 Direct Signature
Any one at recipient's address may sign for delivery.
Fee applies.31 Indirect Signature
If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

Rev. Date 8/05 Part #1522H-1©1994-2005 FedEx PRINTED IN U.S.A. SRV

520

RAW DATA REPORT

Sponsor Study No	NA	Limit of Quantitation (LOQ)	0.011	ng/mL	Set No:	030708D
MPI Study No:	L13938	Limit of Detection (LOD)	0.0022	ng/mL	Analyst:	Mindy Cressley
Analyte	APFO	Injection Volume	15 μ L		Instrument Type:	LC/MS/MS Unit # 7
Ions Monitored	413 -> 369	Matrix:	Water		Extraction Date:	03/07/08
Site	Local Landfill	Sample Volume:	40.0 mL		Analyzed on:	03/15-16/08
		Final Volume:	5.0 mL			

MPI ID	Sponsor ID	Sample Code	Run No	Std. Conc. (ng/mL)	Dilution Factor	Peak Area	PFOA Found (ng/mL)	APFO Found (ng/mL)	Amount PFOA	Recovery (%)
							(ng/mL)	(ng/mL)	Added (ng/mL)	
XC031308-0	-	C	030708D-1401	0	-	0	-	-	-	-
XC031308-1	-	CS	030708D-1402	0.0050	-	567	-	-	-	-
XC031308-2	-	CS	030708D-1403	0.010	-	1048	-	-	-	-
XC031308-3	-	CS	030708D-1404	0.025	-	2587	-	-	-	-
XC031308-4	-	CS	030708D-1405	0.050	-	5041	-	-	-	-
XC031308-5	-	CS	030708D-1406	0.100	-	9671	-	-	-	-
XC031308-6	-	CS	030708D-1407	0.250	-	25404	-	-	-	-
XC031308-7	-	CS	030708D-1408	0.500	-	47062	-	-	-	-
XC031308-8	-	CS	030708D-1409	1.0	-	99836	-	-	-	-
XC031308-9	-	CK	030708D-1410	0.250	-	24322	-	-	-	-
Methanol Wash	-	C	030708D-1411	-	-	0	-	-	-	-
Reagent Control	NA	C	030708D-1412	-	1	0	ND	ND	-	-
L13938-2	LCL-K-EQBLK-2	S	030708D-1413	-	1	0	ND	ND	-	-
Reagent Spk A	NA	LCS	030708D-1414	-	1	5172	0.050	0.052	0.050	100
Reagent Spk B	NA	LCS	030708D-1415	-	1	49953	0.49	0.51	0.50	98
L13938-3 Spk C	LCL-Z-Outlet 004	LF	030708D-1416	-	100	13195	13	14	5.0	84
Methanol Wash	-	C	030708D-1417	-	-	0	-	-	-	-
XC031308-1	-	CS	030708D-1418	0.0050	-	557	-	-	-	-
XC031308-2	-	CS	030708D-1419	0.010	-	1099	-	-	-	-
XC031308-3	-	CS	030708D-1420	0.025	-	2744	-	-	-	-
XC031308-4	-	CS	030708D-1421	0.050	-	4883	-	-	-	-
L13938-1	LCL-Z-Outlet 101	S	030708D-1422	-	1000	2766	-	-	-	-
L13938-1	LCL-Z-Outlet 101	S	030708D-1423	-	100	27832	27	28	-	-
L13938-3	LCL-Z-Outlet 004	S	030708D-1424	-	10	89409	8.8	9.2	-	-
L13938-3 Rep	LCL-Z-Outlet 004	S	030708D-1425	-	10	86567	8.5	8.8	-	-
L13938-4	LCL-Z-Outlet 005	S	030708D-1426	-	10	80478	7.9	8.2	-	-
L13938-5	LCL-Z-SS1	S	030708D-1427	-	100	24713	24	25	-	-
Methanol Wash	-	C	030708D-1428	-	-	0	-	-	-	-
XC031308-5	-	CS	030708D-1429	0.100	-	10372	-	-	-	-
XC031308-6	-	CS	030708D-1430	0.250	-	26384	-	-	-	-
XC031308-7	-	CS	030708D-1431	0.500	-	50299	-	-	-	-
XC031308-8	-	CS	030708D-1432	1.0	-	107268	-	-	-	-

$$\text{PFOA Found (ng/mL)} = \frac{(\text{peak area} - \text{intercept}) / \text{slope} \times \text{DF}}{\text{amount PFOA added (ng/mL)}}$$

$$\text{Recovery (\%)} = \frac{[\text{PFOA found (ng/mL)} - \text{PFOA found in control (ng/mL)}]}{\text{amount PFOA added (ng/mL)}} \times 100$$

Standard Curve Linear (1/x weighted)

Intercept = 47.2991

Slope = 101564

Coef Of Del = 0.997184

$$\text{APFO Found (ng/mL)} = \text{PFOA found (ng/mL)} \times (\text{MW APFO (431)} / \text{MW PFOA (414)})$$

CS = Calibration standard

LF = Lab fortified sample

CK = Check Standard

C = Control sample

FF = Field fortified sample

ND = Not detected = Response between 0 and LOD

S = Sample

LCS = Laboratory Control Spike

NQ = Not quantifiable = Response between LOD and LOQ

Avg Resp of the 250 ppt Standards (area): 25894
 Response of the Check Standard (area): 24322
 Percent Difference (%): 6
 % difference acceptable if within $\pm 15\%$

Spreadsheet prepared by MIC, 3/17/08

*Sample was analyzed with several dilution factors Appropriate response was reported.

0016



3058 Research Drive
State College, PA 16801

Phone: 814-272-1039
Fax: 814-231-1580

Internal Chain of Custody/Fortification Sheet

MPI Study Number: L13938

Matrix: Water

Sponsor Study/Protocol No:

NA

The samples listed below were removed from refrigerator No. 34

Time 8:30 AM

Date 3/7/2008

Initials EDD

	Spiking Solution Used	Volume Used for Spiking	Initial Date
Reagent Spk A	SS25202 (10 ng/mL)	200 µL (200 µL micropipet)	MLC 13/7/08
Reagent Spk B	SS25201 (100 ng/mL)	200 µL (200 µL micropipet)	MLC 13/7/08
L13938-3 Spk C	SS25200 (1000 ng/mL)	200 µL (200 µL micropipet)	MLC 13/7/08
-	-	-	-
-	-	-	-
-	-	-	-

All samples were measured:

Time 10:30 AM

Date 3/7/2008

Initials EAD

After measuring samples were returned to refrigerator No.

Time 3:10 Pm

Date 3/7/2008

Initials *ESS*

Comments: 200 µL of 250 mg/mL sodium thiosulfate was added to all samples before spiking. Initials/Date: EDD 3/7/08

Analysis Summary:

Data Set: 030708D

Initials/Date: MLC/3/14/08

Initials/Date: _____ - / _____

Initials/Date: _____ - / -

0320108

Set extraction/analysis data verified by: JDC

0017

Date: 03/24/08

July 26, 2001/6



3058 Research Drive
State College, PA 16801

Phone: 814-272-1039
Fax: 814-231-1580

SAMPLE EXTRACTION AND ANALYSIS TRACKING SHEET

MPI STUDY NUMBER: L13938
MATRIX: Water

METHOD: 01M-008-046^{ss}
ANALYTES: PFOA

PROTOCOL NUMBER: NA

STEP 1: SPE column clean-up

STEP 2: Final volume to 5 mL collected in 15 mL polypropylene tubes

STEP 3: LC/MS/MS analysis

STEP 4: LC/MS/MS reanalysis.

[^]Initials and date under each step indicates the personnel that performed this step.

Method of Analysis for the Determination of Ammonium Perfluoroctanoate (APFO) in Water

COMMENTS:

② SAMPLES WERE PLACED ON AUTOSAMPLER ON 3/14/08,
BUT DID NOT INJECT UNTIL 3/15/08. MLC 3/17/08

Final extracts stored in refrigerator 32 Initials: EON Date: 3/7/2008

July 12, 2005/5



3058 Research Drive
State College, PA 16801

Phone: 814-272-1039
Fax: 814-231-1580

STUDY NO. L13938

PREPARATION OF EXTRACTED CALIBRATION STANDARDS

Protocol No.: None
Method No.: 01M-008-046*

MPI Study No.: NA
Analytes: PFOA

Matrix: Water^
Sample Vol: 40 mL

Sponsor Sample ID	MPI Solution ID	Sample Description	Fort. Solution ID	Fort. Soln. Conc. (ng/mL)	Fort. Volume (μL)	Micropipet used (μL)	Fort. Level (ppt)	Final Solution ID # **	Reagents/ Materials	Lot #
NA	SL0033753	Water^	-	-	-	-	-	XC031308-0	Methanol	47360
NA	SL0033753	Water^	SS26522	10	20	20	5	XC031308-1	C18 SPE	005637251D
NA	SL0033753	Water^	SS26522	10	40	20	10	XC031308-2	-	-
NA	SL0033753	Water^	SS26522	10	100	200	25	XC031308-3	-	-
NA	SL0033753	Water^	SS26522	10	200	200	50	XC031308-4	-	-
NA	SL0033753	Water^	SS26522	10	400	200	100	XC031308-5	-	-
NA	SL0033753	Water^	SS26521	100	100	200	250	XC031308-6	-	-
NA	SL0033753	Water^	SS26521	100	200	200	500	XC031308-7	-	-
NA	SL0033753	Water^	SS26521	100	400	200	1000	XC031308-8		
NA	SL0033753	Water^	SS26515	100	100	200	250	XC031308-9	Initials/Date:	EDD 01/13/08

Vertical arrows in a column indicate identical values.

**This must be a unique number. Use this system: Extracted Calibration Soln ID #: XCMMDDYY-0, 1, 2, 3, etc.

Samples removed from refrigerator freezer # 34 Time: 8:15 AM Initials/Date: EDD 1/13/08

40 mL of each sample measured using a 50 mL graduated cylinder. Initials/Date: EDD 1/13/08

After measuring, samples returned to refrigerator freezer # 34 Time: 12:01 PM Initials/Date: EDD 1/13/08

Samples fortified: Initials/Date: MUC 1/13/08

SPE clean-up: Initials/Date: EDD 1/13/08

Final volume adjusted to 5 mL: Initials/Date: EDD 1/13/08

Extracts placed in refrigerator # 32 Initials/Date: EDD 1/13/08

STANDARD EXPIRATION DATE: 3/27/2008

Comments: ^This water has been filtered through a hypercarb filter
* Method of Analysis for the Determination of Ammonium Perfluorooctanoate (APFO) in Water.

"THIS IS AN EXACT COPY OF
THE ORIGINAL DOCUMENT"
BY MUC DATE 3/17/08

July 12, 2005/1

STUDY NO. L13938MLC 3/14/08

Vial	File Name	LIMS ID	Client ID	Sample Description	Matrix	Sample Type	Conc (ng/mL)	Conc B	Conc C	Test ID	DF
1	1	030708D-1401	---	XC031308-0, 0 ng/mL standard	---	Blank	0	---	---	0	1
2	2	030708D-1402	---	XC031308-1, 0.0050 ng/mL standard	---	Standard	0.0050	---	---	0	1
3	3	030708D-1403	---	XC031308-2, 0.010 ng/mL standard	---	Standard	0.010	---	---	0	1
4	4	030708D-1404	---	XC031308-3, 0.025 ng/mL standard	---	Standard	0.025	---	---	0	1
5	5	030708D-1405	---	XC031308-4, 0.050 ng/mL standard	---	Standard	0.050	---	---	0	1
6	6	030708D-1406	---	XC031308-5, 0.100 ng/mL standard	---	Standard	0.100	---	---	0	1
7	7	030708D-1407	---	XC031308-6, 0.250 ng/mL standard	---	Standard	0.250	---	---	0	1
8	8	030708D-1408	---	XC031308-7, 0.500 ng/mL standard	---	Standard	0.500	---	---	0	1
9	9	030708D-1409	---	XC031308-8, 1.0 ng/mL standard	---	Standard	1.0	---	---	0	1
10	10	030708D-1410	---	XC031308-9, 0.250 ng/mL check standard	---	QC	0.250	---	---	0	1
11	92	030708D-1411	---	Methanol Wash	---	Blank	---	---	---	0	1
12	69	030708D-1412	---	Reagent Control	---	Blank	---	---	---	0	1
13	70	030708D-1413	---	L13938-2	---	Analyte	---	---	---	0	1
14	71	030708D-1414	---	Reagent Spk A, 0.050 ng/mL	---	QC	0.050	---	---	0	1
15	72	030708D-1415	---	Reagent Spk B, 0.500 ng/mL	---	QC	0.500	---	---	0	1
16	73	030708D-1416	---	L13938-3 Spk C, 5.0 ng/mL, DF=100	---	QC	5.0	---	---	0	100
17	92	030708D-1417	---	Methanol Wash	---	Blank	---	---	---	0	1
18	2	030708D-1418	---	XC031308-1, 0.0050 ng/mL standard	---	Standard	0.0050	---	---	0	1
19	3	030708D-1419	---	XC031308-2, 0.010 ng/mL standard	---	Standard	0.010	---	---	0	1
20	4	030708D-1420	---	XC031308-3, 0.025 ng/mL standard	---	Standard	0.025	---	---	0	1
21	5	030708D-1421	---	XC031308-4, 0.050 ng/mL standard	---	Standard	0.050	---	---	0	1
22	74	030708D-1422	---	L13938-1, DF= 1,000	---	Analyte	---	---	---	0	1000
23	75	030708D-1423	---	L13938-1, DF= 100	---	Analyte	---	---	---	0	100
24	76	030708D-1424	---	L13938-3, DF=10	---	Analyte	---	---	---	0	10
25	77	030708D-1425	---	L13938-3 Rep, DF= 10	---	Analyte	---	---	---	0	10
26	78	030708D-1426	---	L13938-4, DF=10	---	Analyte	---	---	---	0	10
27	79	030708D-1427	---	L13938-5, DF=100	---	Analyte	---	---	---	0	100
28	92	030708D-1428	---	Methanol Wash	---	Blank	---	---	---	0	1
29	6	030708D-1429	---	XC031308-5, 0.100 ng/mL standard	---	Standard	0.100	---	---	0	1
30	7	030708D-1430	---	XC031308-6, 0.250 ng/mL standard	---	Standard	0.250	---	---	0	1
31	8	030708D-1431	---	XC031308-7, 0.500 ng/mL standard	---	Standard	0.500	---	---	0	1
32	9	030708D-1432	---	XC031308-8, 1.0 ng/mL standard	---	Standard	1.0	---	---	0	1

Sample List: C:\MASSLYNX\008 APFO.PRO\SampleDB\030708d.spl
Printed: Fri Mar 14 13:07:49 2008

Page Position: (2, 1)

MLC 3/14/08

1 STUDY NO. L13938

	MS Method	HPLC Method	MS Tune File	Inj Volume (μ L)
1	008 PFOA	water	PFOA Tune	15
2	008 PFOA	water	PFOA Tune	15
3	008 PFOA	water	PFOA Tune	15
4	008 PFOA	water	PFOA Tune	15
5	008 PFOA	water	PFOA Tune	15
6	008 PFOA	water	PFOA Tune	15
7	008 PFOA	water	PFOA Tune	15
8	008 PFOA	water	PFOA Tune	15
9	008 PFOA	water	PFOA Tune	15
10	008 PFOA	water	PFOA Tune	15
11	008 PFOA	water	PFOA Tune	15
12	008 PFOA	water	PFOA Tune	15
13	008 PFOA	water	PFOA Tune	15
14	008 PFOA	water	PFOA Tune	15
15	008 PFOA	water	PFOA Tune	15
16	008 PFOA	water	PFOA Tune	15
17	008 PFOA	water	PFOA Tune	15
18	008 PFOA	water	PFOA Tune	15
19	008 PFOA	water	PFOA Tune	15
20	008 PFOA	water	PFOA Tune	15
21	008 PFOA	water	PFOA Tune	15
22	008 PFOA	water	PFOA Tune	15
23	008 PFOA	water	PFOA Tune	15
24	008 PFOA	water	PFOA Tune	15
25	008 PFOA	water	PFOA Tune	15
26	008 PFOA	water	PFOA Tune	15
27	008 PFOA	water	PFOA Tune	15
28	008 PFOA	water	PFOA Tune	15
29	008 PFOA	water	PFOA Tune	15
30	008 PFOA	water	PFOA Tune	15
31	008 PFOA	water	PFOA Tune	15
32	008 PFOA	water	PFOA Tune	15

0021

LC/MS/MS SYSTEM AND OPERATING CONDITIONS

Sponsor Protocol No: NA

MPI Study No: L13938

Instrument: Micromass Quattro Ultima (LC/MS/MS Unit #7)

Computer: COMPAQ Professional Workstation AP200

Software: Microsoft Windows NT: Version 4 Build 1381: Service Pack 5
Micromass Limited: MassLynx 3.4 Build 004

HPLC Equipment: Agilent Technologies (HP) Series 1100
 HP Binary Pump HP Vacuum Degasser
 HP Autosampler HP Column Oven

HPLC Column: Genesis C-8, 5 cm x 2.1 mm i.d. x 4 μ (MPI ID: MA0037955)
(JONES CHROMATOGRAPHY: Part No. FK5962E)

Mobile Phase (A) : 2 mM Ammonium Acetate in Water
Mobile Phase (B) : Methanol

Analyst: Mindy Cressley *MLC 3/14/08*
 MPI Research, Inc.
 3058 Research Drive, State College, PA 16801
 Phone: (814) 272-1039 FAX: (814) 231-1580

**NOTE: The next 3 pages are computer generated printouts from
the masslynx software program. The pages contain the
instrument settings used for the analysis of this data set.**

All Handwritten Peak ID's by: *MLC 3/17/08*

Scanning Method Report

Page 1

Method: C:\MASSLYNX\008 APFO.PRO\ACQUDB\008 PFOA
Last Modified: Wed Mar 20 16:07:50 2002

Printed: Fri Mar 14 13:07:57 2008

MLC 3/14/08

Solvent Delay (mins) : 0.00

Function : 1 MRM of 1 Mass Pair (ESP-)

Inter Channel Delay (Secs) : 0.03

Span (Daltons) : 0.00

Start Time (Mins) : 0.00

End Time (Mins) : 8.00

Repeats : 1

Channel	Parent	Daughter	Dwell (Secs)	Coll Energy (eV)	Cone (V)
1	413.00	369.00	0.20	10	10

Method File: c:\masslynx\008.apfo.prolacqudbwater
 Last Modified: Friday, March 14, 2008 12:53:23

Printed: Friday, March 14, 2008 13:08:02

MLC 3/14/08

HP1100 LC Pump Initial Conditions

Solvents

A%	60.0
B%	40.0
C%	0.0
D%	0.0

Flow (ml/min)	0.300
Stop Time (mins)	15.0
Min Pressure (bar)	0
Max Pressure (bar)	400
Oven Temperature Left(°C)	35.0
Oven Temperature Right(°C)	35.0

HP1100 LC Pump Gradient Timetable

The gradient Timetable contains 10 entries which are :

Time	A%	B%	C%	D%	Flow	Pressure
0.00	60.0	40.0	0.0	0.0	0.300	400
0.40	60.0	40.0	0.0	0.0	0.300	400
1.00	10.0	90.0	0.0	0.0	0.300	400
7.00	10.0	90.0	0.0	0.0	0.300	400
7.50	0.0	100.0	0.0	0.0	0.300	400
9.00	0.0	100.0	0.0	0.0	0.400	400
9.50	60.0	40.0	0.0	0.0	0.400	400
13.50	60.0	40.0	0.0	0.0	0.400	400
14.00	60.0	40.0	0.0	0.0	0.300	400
15.00	60.0	40.0	0.0	0.0	0.300	400

HP1100 LC Pump External Event Timetable

The Timetable contains 4 entries which are :

Time	Column Switch	Contact1	Contact2	Contact3	Contact4
Initial	Off	Off	Off	Off	Off
0.00	Off	On	Off	Off	Off
0.10	Off	Off	On	Off	Off
8.00	Off	Off	Off	Off	Off

HP1100 Autosampler Initial Conditions

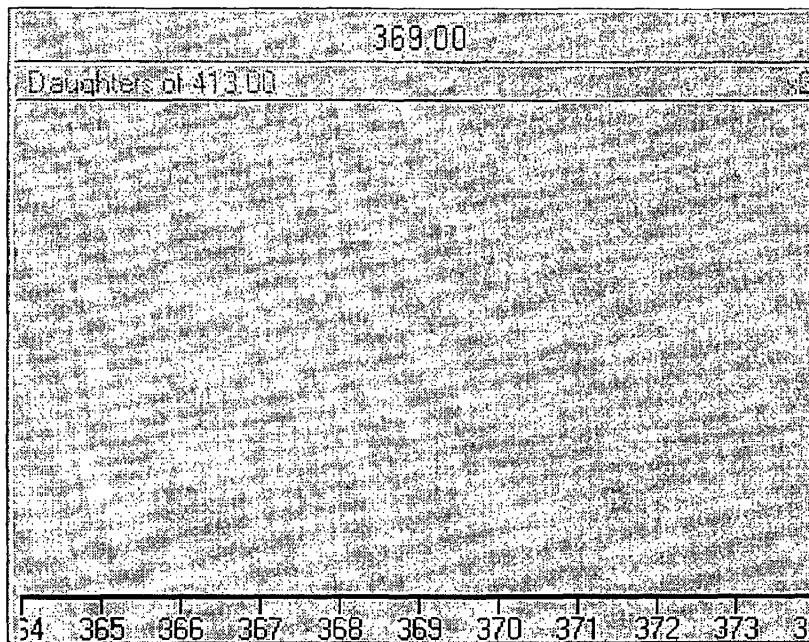
Draw Speed	200.0
Eject Speed (μl/min)	200
Draw Position (mm)	0.10
Stop Time (mins)	15.00
Injection Volume(μl)	15.0
Vial Number	8

Tuning Method Report

Page 1

Method: C:\MASSLYNX\008 APFO.PRO\ACQUDB\PFOA TUNE

Printed: Fri Mar 14 13:08:16 2008 MLC 3/14/08



Dau 413.00

SOURCE (ESP-)	Set	Rdbk	Analyser	Set	Rdbk
Capillary	3.00	-2.94	LM Res 1	14.0	
Cone	10	-10	HM Res 1	14.0	
Hexapole 1	0.0		IEnergy 1	1.0	
Aperture 1	0.0		Entrance	-2	8
Hexapole 2	0.0		Collision	10	9
Source Block Temp.	100	101	Exit	2	11
Desolvation Temp.	300	300	LM Res 2	14.0	
			HM Res 2	14.0	
			IEnergy 2	2.0	
			Multiplier	700	-695
Pressures	Rdbk		Gas Flows	Rdbk	
Analyser Vacuum	OFF		Cone Gas	76.8	
Gas Cell	2.1e-3		Desolvation	682.4	

Initial Calibration Curve

MPI Study No.: L13938
 Set No. 030708D
 Extraction Date: 03/07/08
 Analyzed on: 03/15-16/08

The first curve of the data set is used to determine performance. A linear regression (with no weighting) is performed using the first eight standards of the analytical run. The coefficient of determination (R Square) must be 0.985 or greater. If the set fails to meet this requirement, the run must be rejected and the samples reanalyzed.

MPI ID	Standard Concentration	
	(ng/mL)	Peak Area
XC031308-1	0.0050	567
XC031308-2	0.0100	1048
XC031308-3	0.0250	2587
XC031308-4	0.0500	5041
XC031308-5	0.1000	9671
XC031308-6	0.2500	25404
XC031308-7	0.5000	47062
XC031308-8	1.0000	99836

Coefficient of Determination: 0.999157659

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.999578741
R Square	0.999157659
Adjusted R Square	0.999017268
Standard Error	1084.912796
Observations	8

MLC
3/17/08

ANOVA

	df	SS	MS	F	Significance F
Regression	1	8376967193	8376967193	7117.003038	1.86832E-10
Residual	6	7062214.655	1177035.776		
Total	7	8384029408			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-97.15298726	477.5528267	-0.20343925	0.845515915	-1265.682656	1071.376682	-1265.682656	1071.376682
X Variable 1	98965.57933	1173.101515	84.36233187	1.86832E-10	96095.10333	101836.0553	96095.10333	101836.0553

LOD and LOQ Determination

MPI Study No.: L13285
Set No: 010208A
Extraction Date: 01/02/08
Analyzed on: 01/02-03/08

The height of the first 0.005 ng/mL standard of the analytical run is measured in centimeters and recorded. The height of the noise in a one minute range before the PFOA retention time in the reagent control is measured in centimeters and recorded. The noise height is then divided by the standard height. The result is converted to ng/mL by multiplying by the concentration of the standard measured (0.005 ng/mL). The LOD is calculated by taking 3 times the signal to noise ratio in ng/mL. The LOQ is calculated by taking 5 times the LOD.

MPI ID	Concentration (ng/mL)	Height (cm)
XC122607-1	0.005	17.7
Reagent Control	0	2.6

Signal to Noise Ratio = [height of the noise in the reagent control (cm) / height of the 0.005 ng/mL standard(cm)] x 0.005 ng/mL

Signal to Noise Ratio (ng/mL) = 0.00073 ng/mL
LOD = 0.0022 ng/mL
LOQ = 0.011 ng/mL

MLC
1/3/08

STUDY NO. L13938

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BY MLC DATE 1/3/08

XC122607-1, 0.0050 ng/mL standard

02-Jan-2008 17:35:33

LC/MS/MS #7

010208A-102 Sm (Mn, 2x3)

MRM of 1 Channel ES-

100

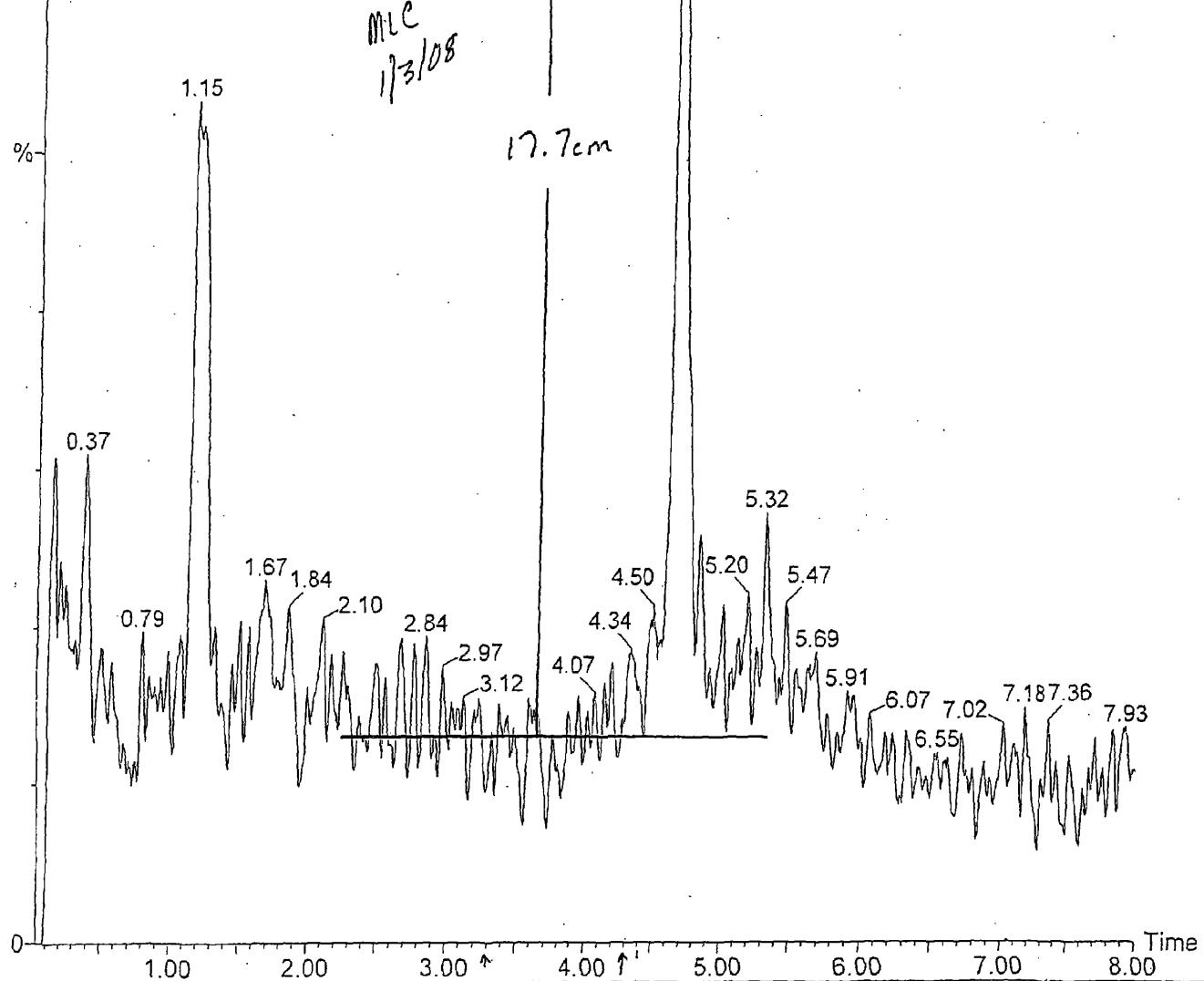
413 > 369

7.00e3

4.68

STUDY NO. L13938

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THE ORIGINAL DOCUMENT"
BY MLC DATE 1/3/08



00~8

Reagent Control

02-Jan-2008 20:23:18

LC/MS/MS #7

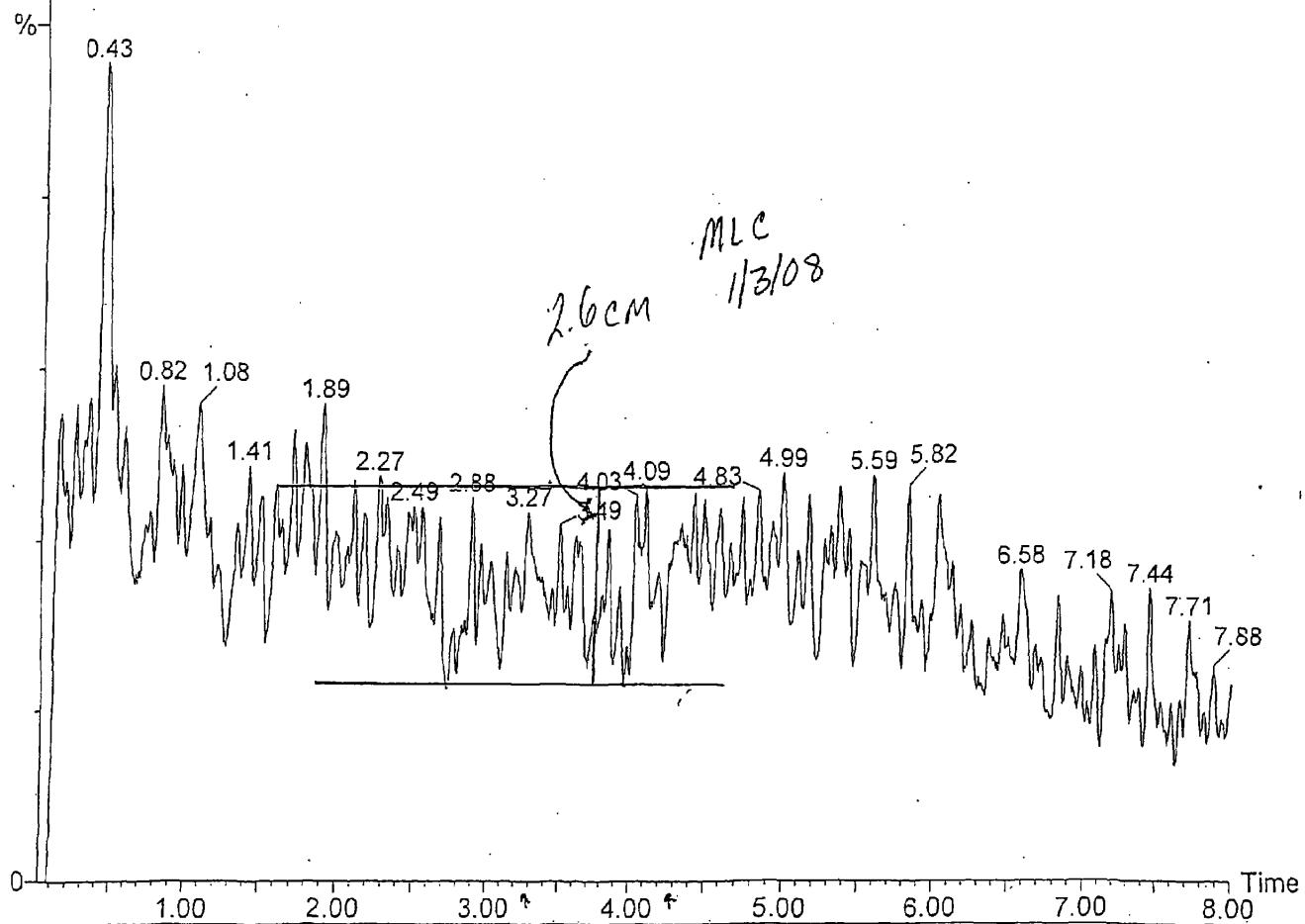
010208A-112 Sm (Mn, 2x3)

MRM of 1 Channel ES-

100

413 > 369

7.00e3

STUDY NO. L13938"THIS IS AN EXACT COPY OF
THE ORIGINAL DOCUMENT"BY MLC DATE 1/3/08

0029

Quantify Calibration Report

Page 1

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Calibration: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\CurveDB\030708D

Last modified: Mon Mar 17 12:17:14 2008

Printed: Mon Mar 17 12:18:01 2008

MLC 3/17/08

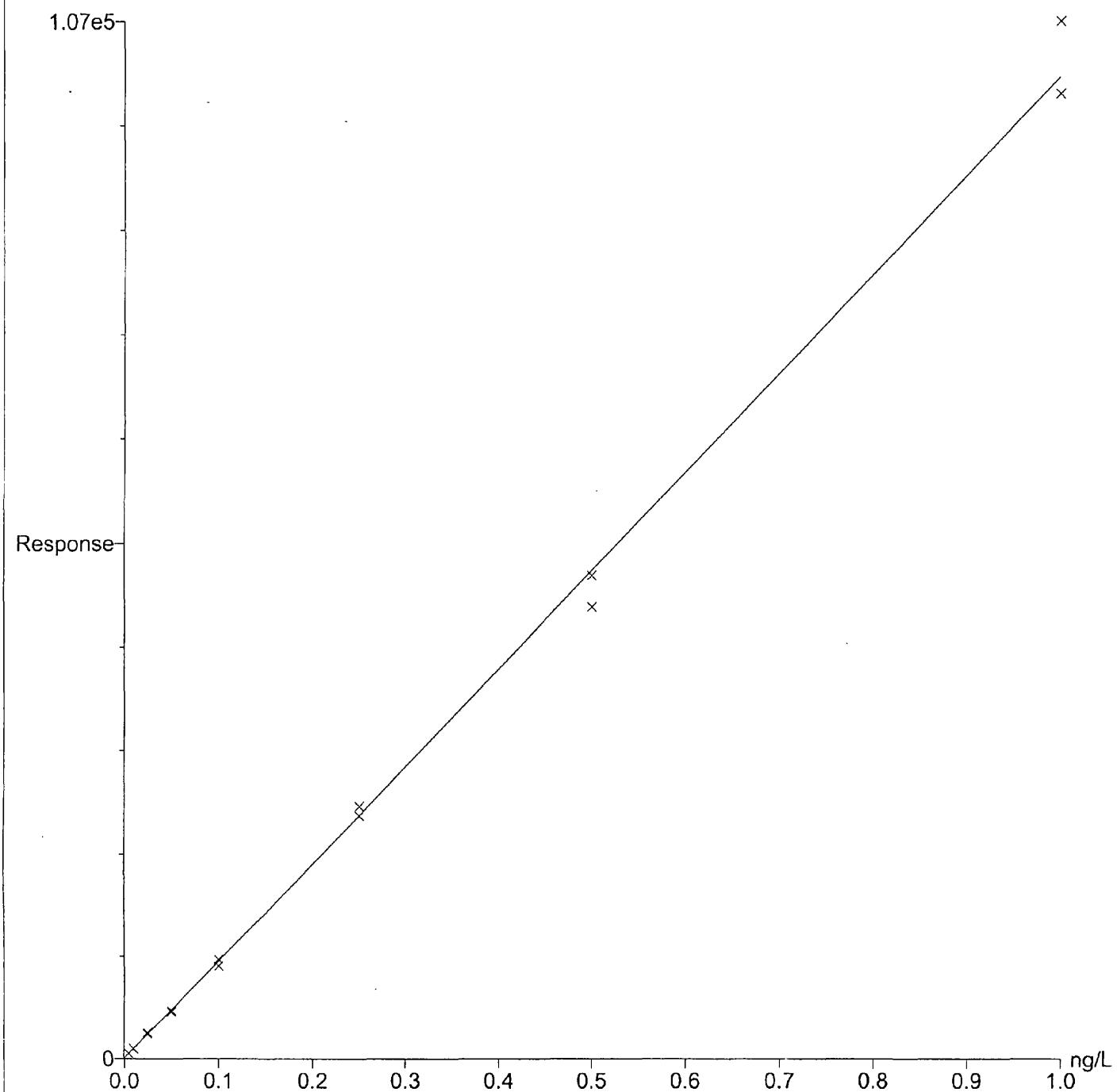
Compound 1 name: PFOA

Coefficient of Determination: 0.997184

Calibration curve: $101564 * x + 47.2991$

Response type: External Std, Area

Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Quantify Sample Report

Page 1

Study No: L13938, Set No: 030708D, Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

Job Code:

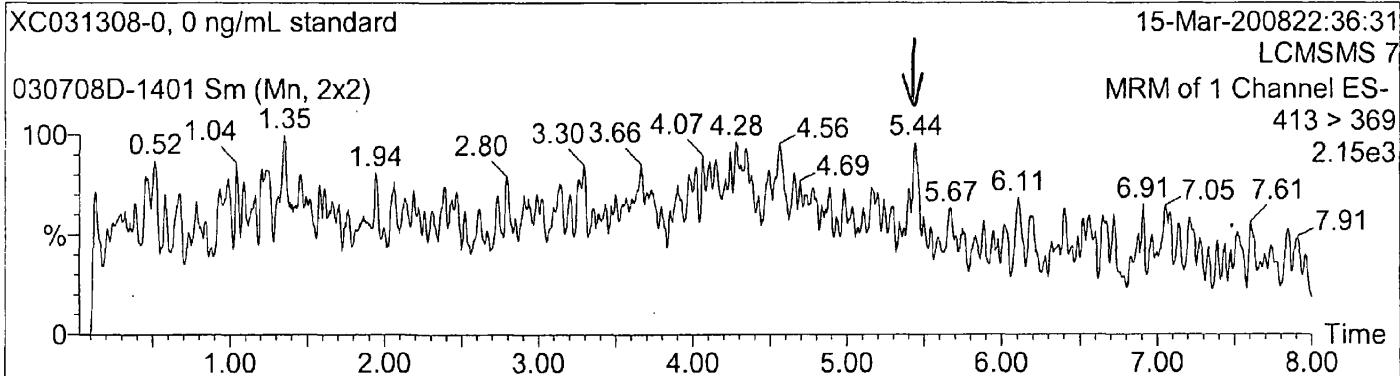
Initials MLCDate 3/17/08Run# 030708D-1401 To 030708D-1432

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1401

Text:

1: PFOA



Quantify Sample Report

Page 2

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1402

Text:

1: PFOA

XC031308-1, 0.0050 ng/mL standard

15-Mar-2008 22:53:08

LCMSMS 7

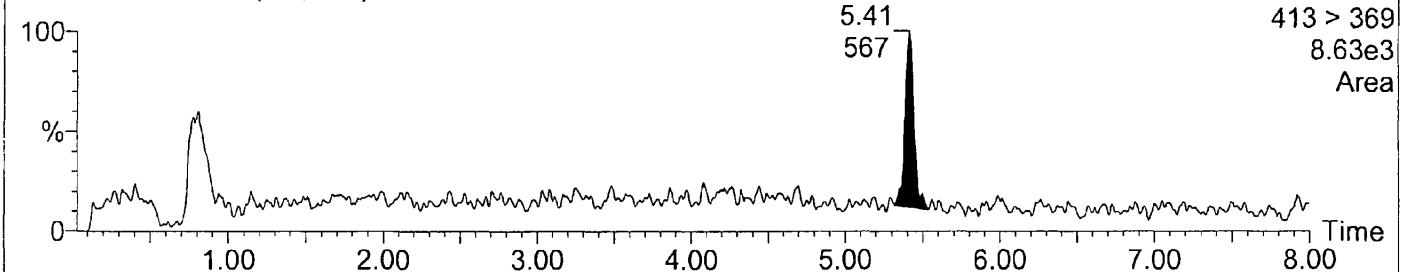
030708D-1402 Sm (Mn, 2x2)

MRM of 1 Channel ES-

413 > 369

8.63e3

Area



Quantify Sample Report

Page 3

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

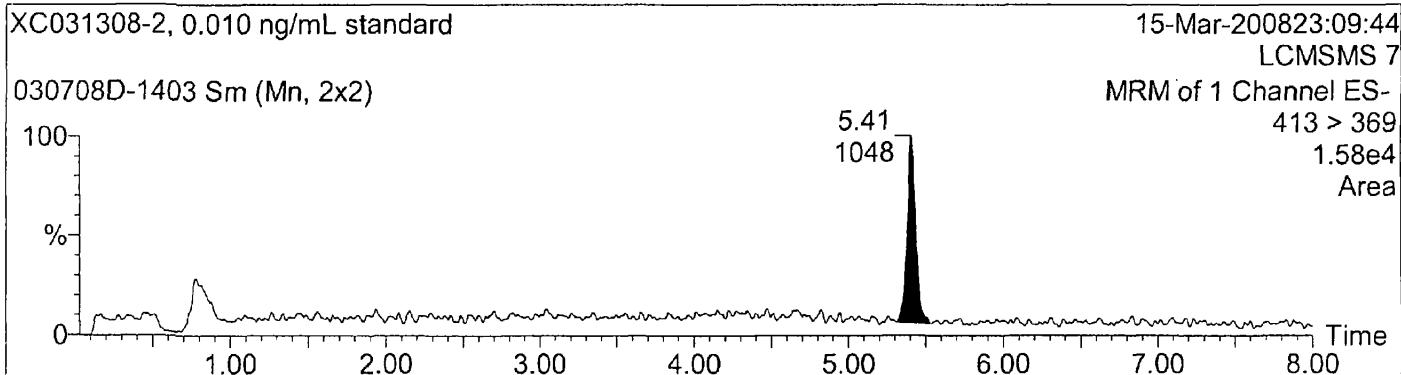
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1403

Text:

1: PFOA



Quantify Sample Report

Page 4

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

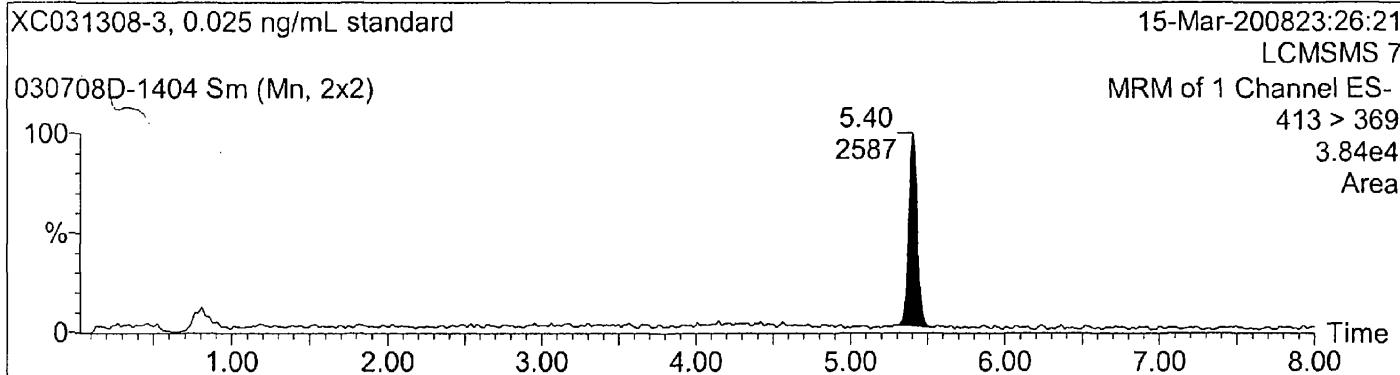
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1404

Text:

1: PFOA



Quantify Sample Report

Page 5

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

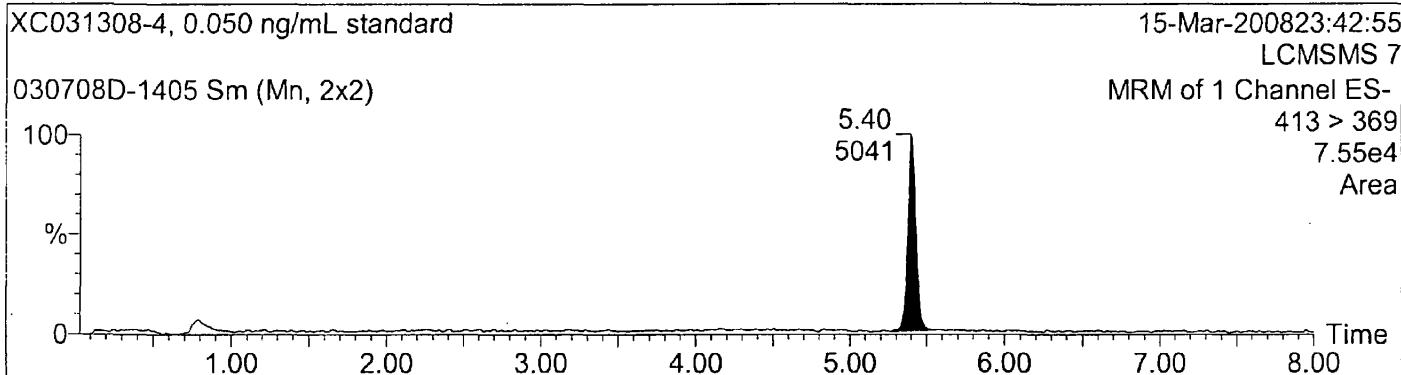
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1405

Text:

1: PFOA



Quantify Sample Report

Page 6

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

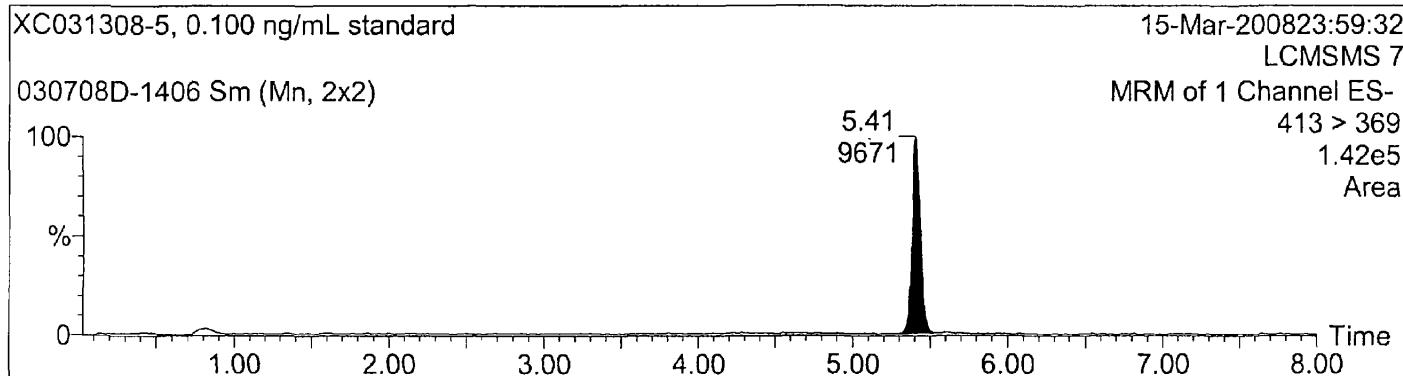
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1406

Text:

1: PFOA



Quantify Sample Report

Page 7

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

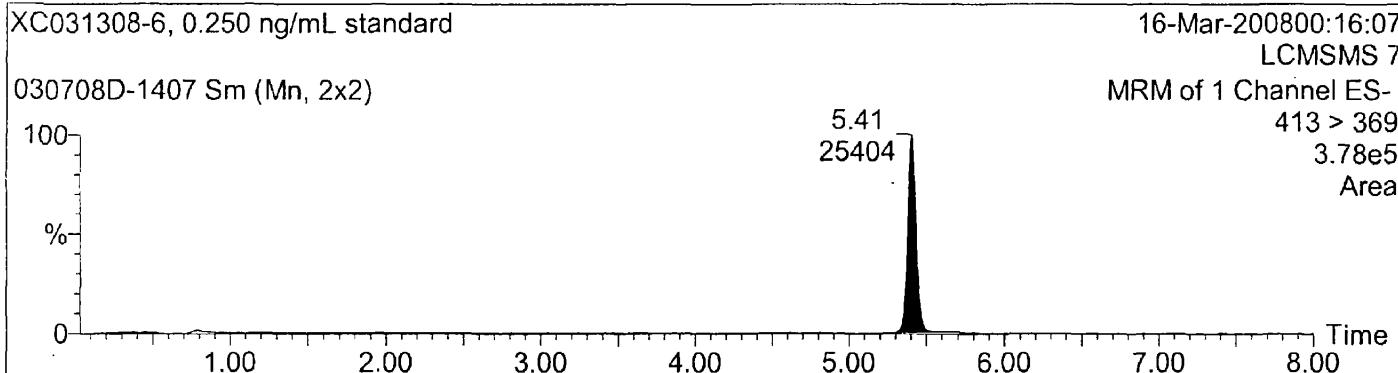
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1407

Text:

1: PFOA



Quantify Sample Report

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

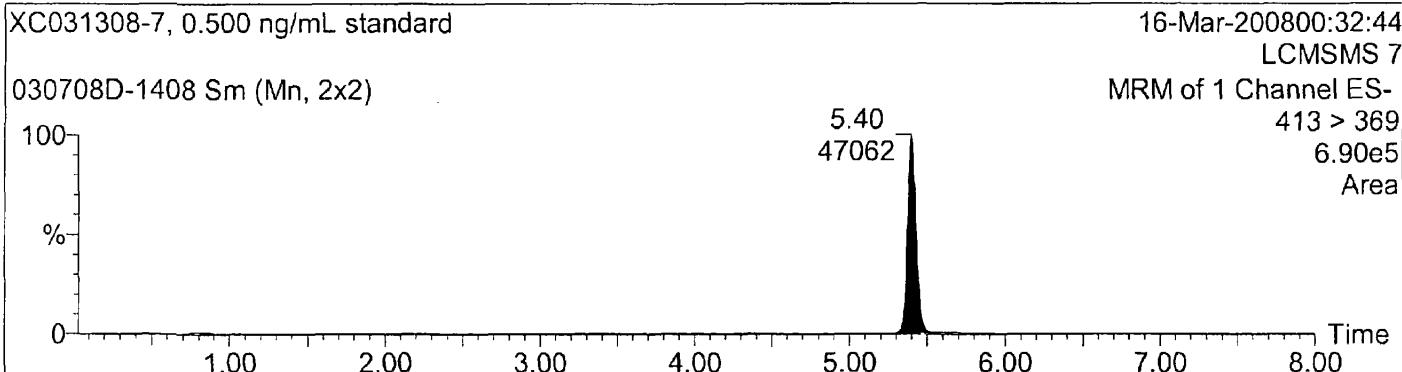
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1408

Text:

1: PFOA



Quantify Sample Report

Page 9

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

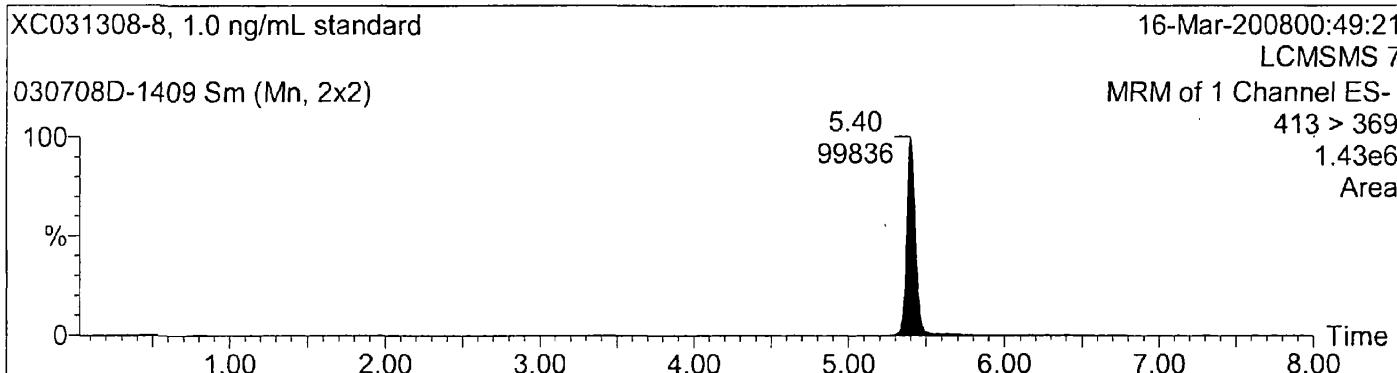
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1409

Text:

1: PFOA



Quantify Sample Report

Page 10

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

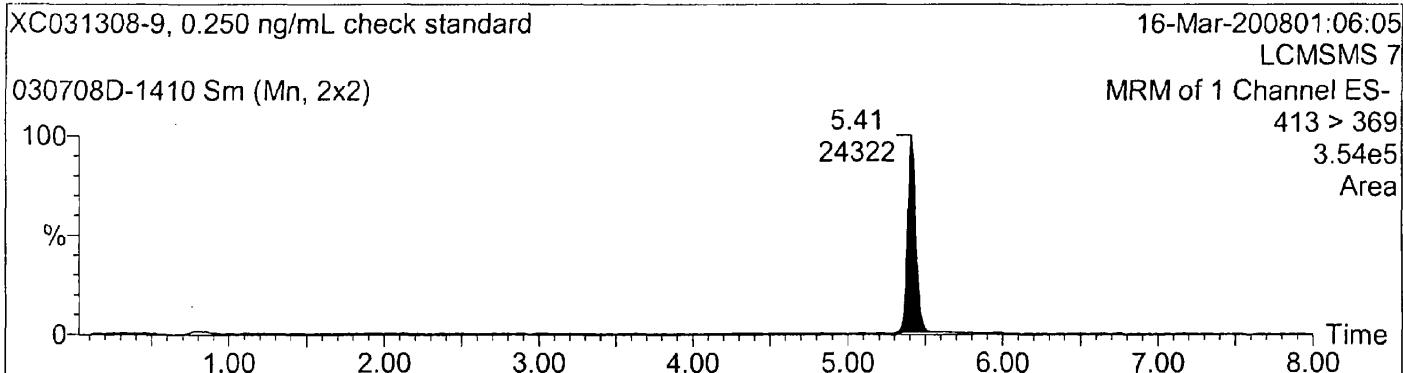
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1410

Text:

1: PFOA



Quantify Sample Report

Page 11

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

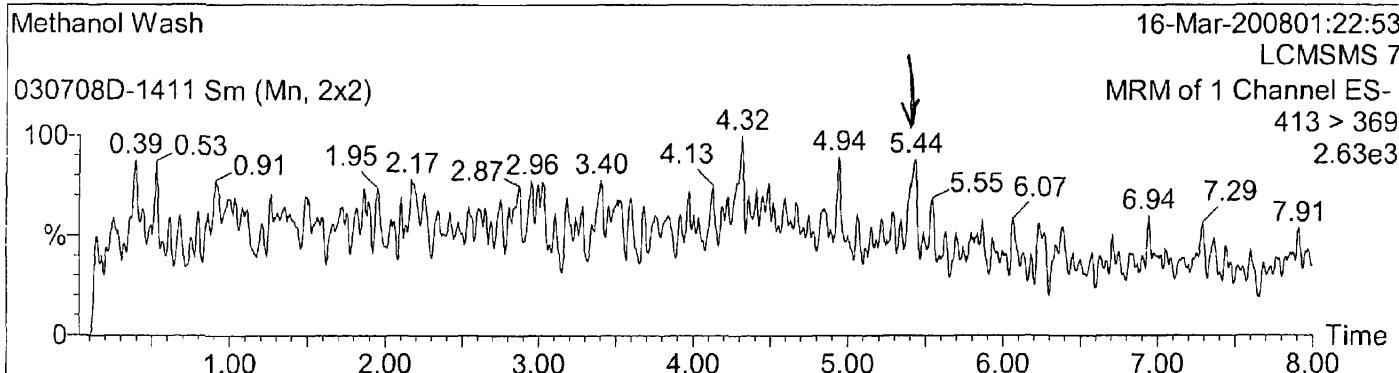
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1411

Text:

1: PFOA



Quantify Sample Report

Page 12

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

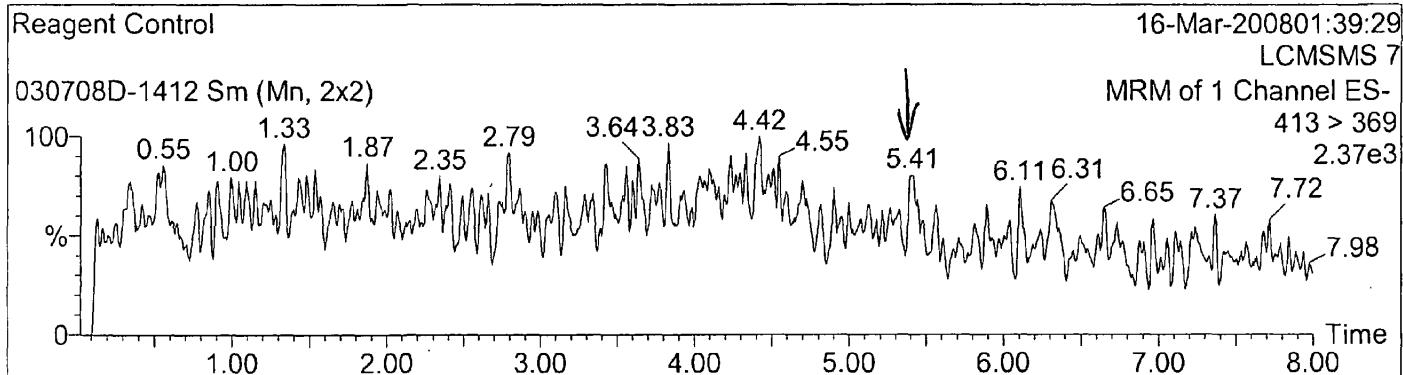
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1412

Text:

1: PFOA



Quantify Sample Report

Page 13

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1413

Text:

l: PFOA

L13938-2

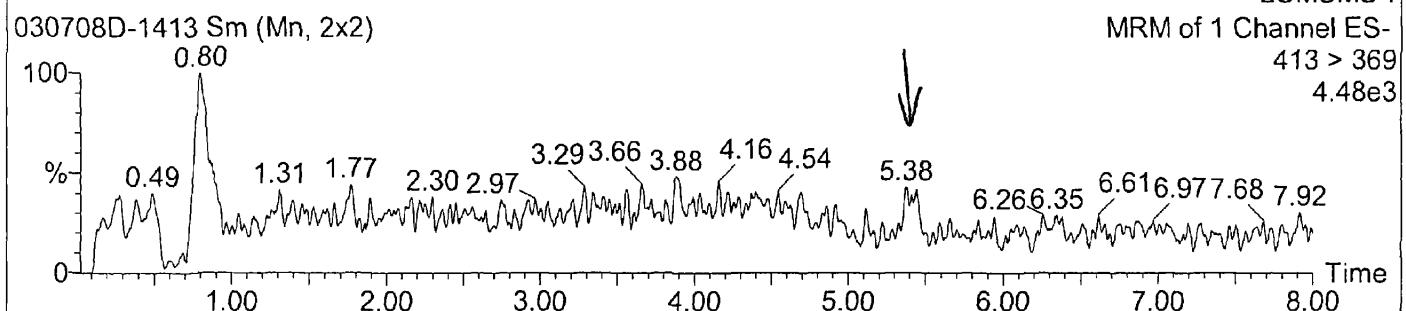
16-Mar-2008 01:56:09

LCMSMS 7

MRM of 1 Channel ES-

413 > 369

4.48e3



Quantify Sample Report

Page 14

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1414

Text:

1: PFOA

Reagent Spk A, 0.050 ng/mL

16-Mar-2008 02:12:57

LCMSMS 7

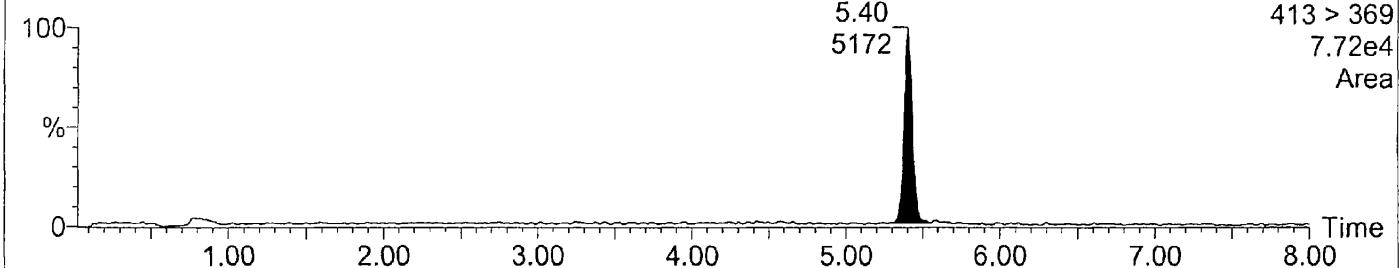
030708D-1414 Sm (Mn, 2x2)

MRM of 1 Channel ES-

413 > 369

7.72e4

Area



Quantify Sample Report

Page 15

Study No: L13938, Set No: 030708D, Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

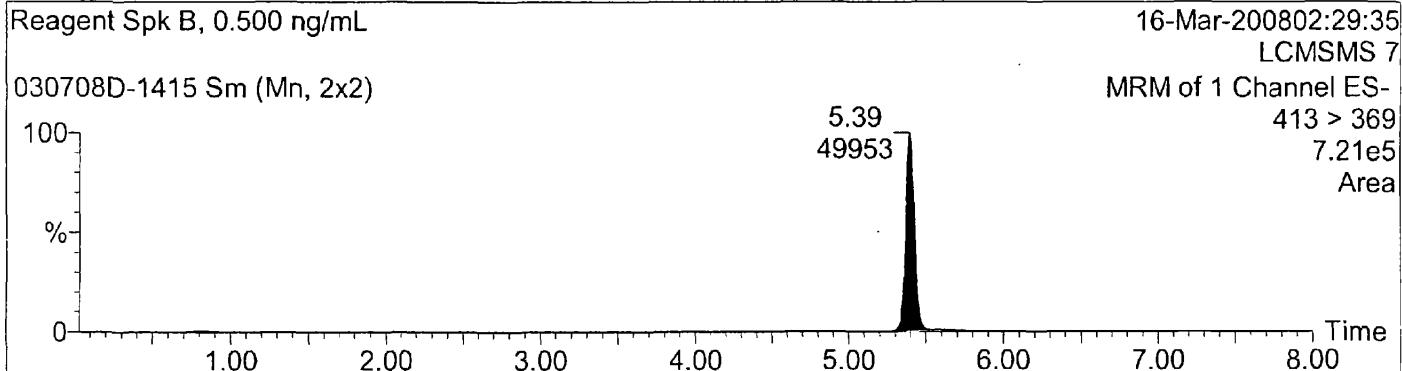
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1415

Text:

1: PFOA



Quantify Sample Report

Page 16

Study No: L13938, Set No: 030708D, Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

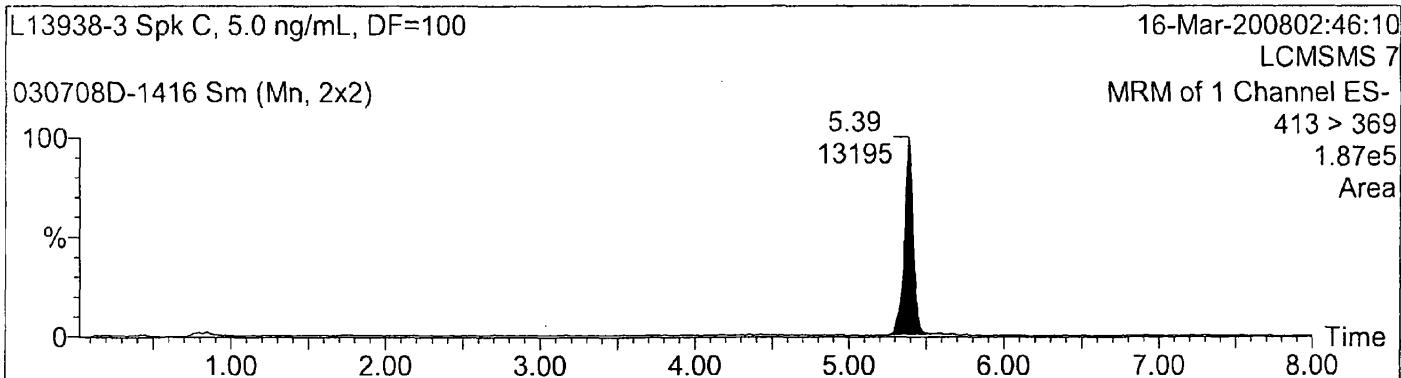
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1416

Text:

1: PFOA



Quantify Sample Report

Page 17

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

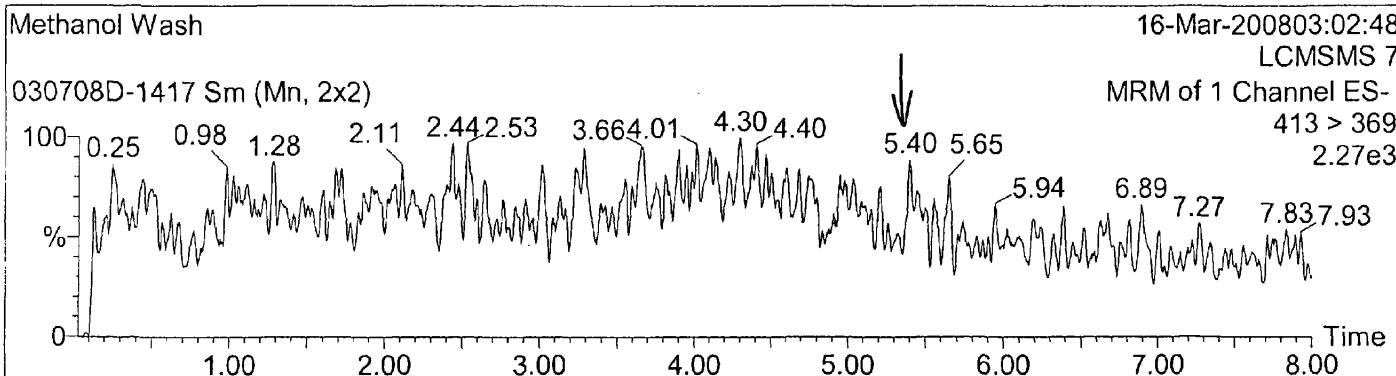
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1417

Text:

1: PFOA



Quantify Sample Report

Page 18

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

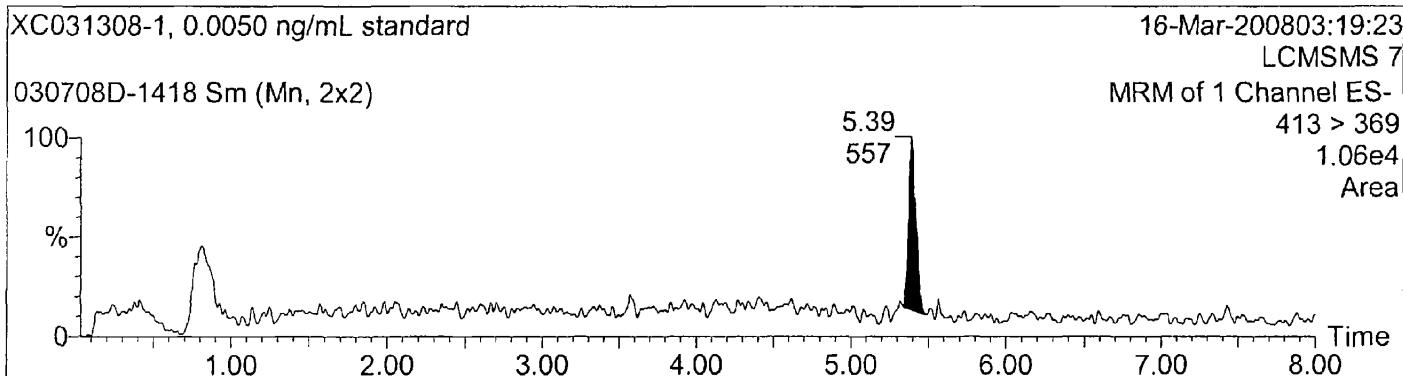
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1418

Text:

1: PFOA



Quantify Sample Report

Page 19

Study No: L13938, Set No: 030708D, Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

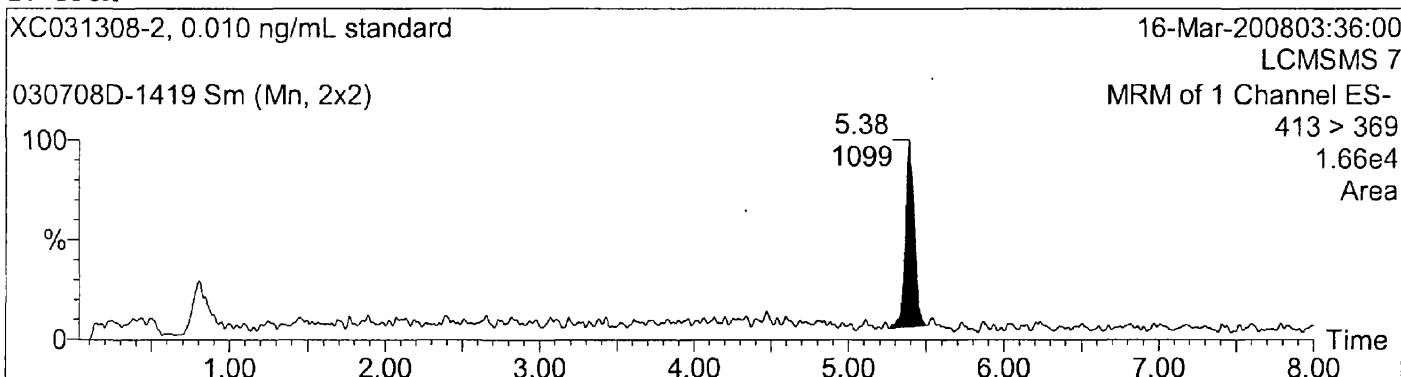
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1419

Text:

1: PFOA



Quantify Sample Report

Page 20

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

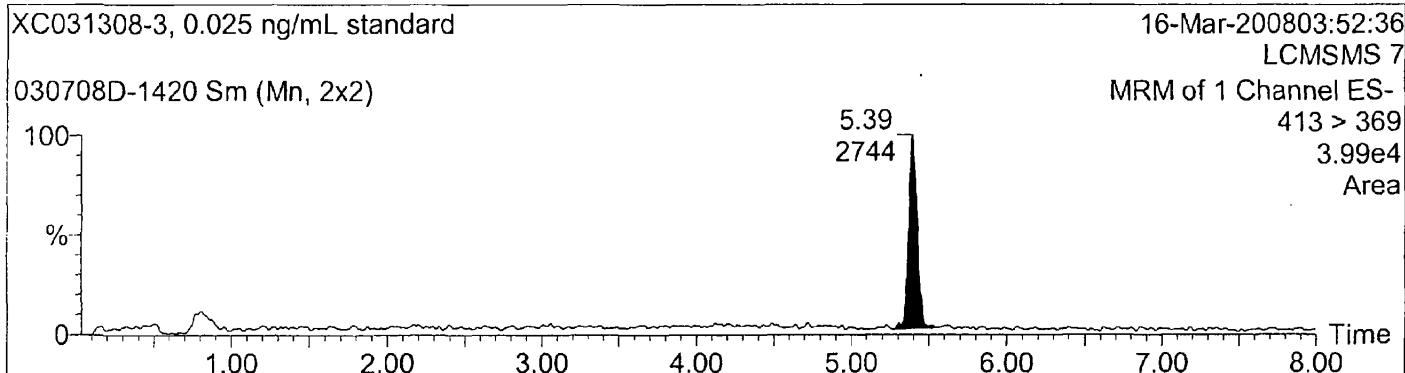
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1420

Text:

1: PFOA



Quantify Sample Report

Page 21

Study No: L13938, Set No: 030708D, Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

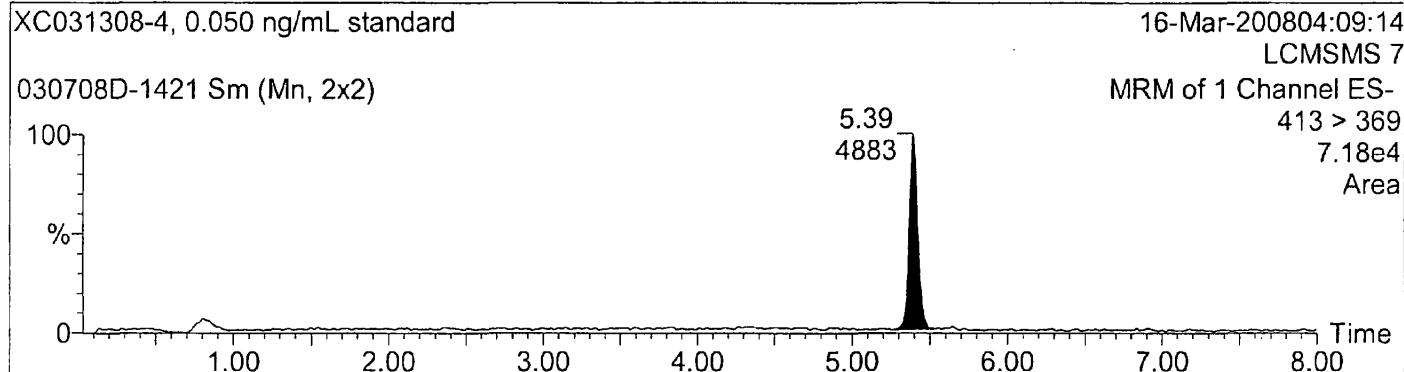
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1421

Text:

1: PFOA



Quantify Sample Report

Page 22

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1422

Text:

1: PFOA

L13938-1, DF= 1,000

16-Mar-2008 04:25:49

LCMSMS 7

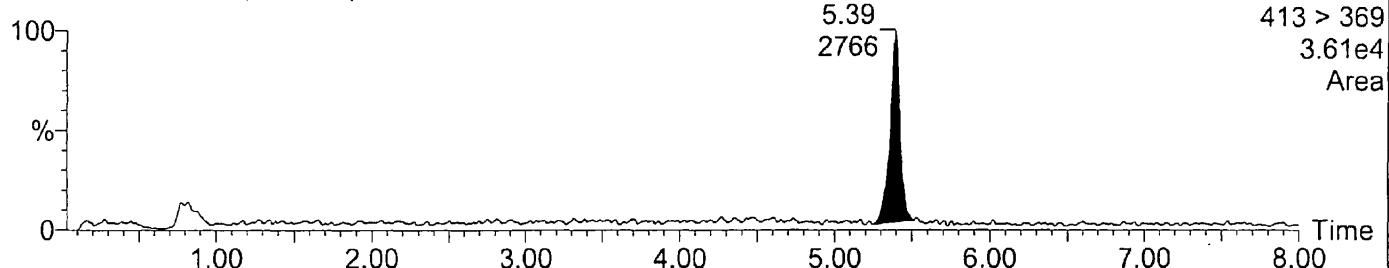
030708D-1422 Sm (Mn, 2x2)

MRM of 1 Channel ES-

413 > 369

3.61e4

Area



Quantify Sample Report

Page 23

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

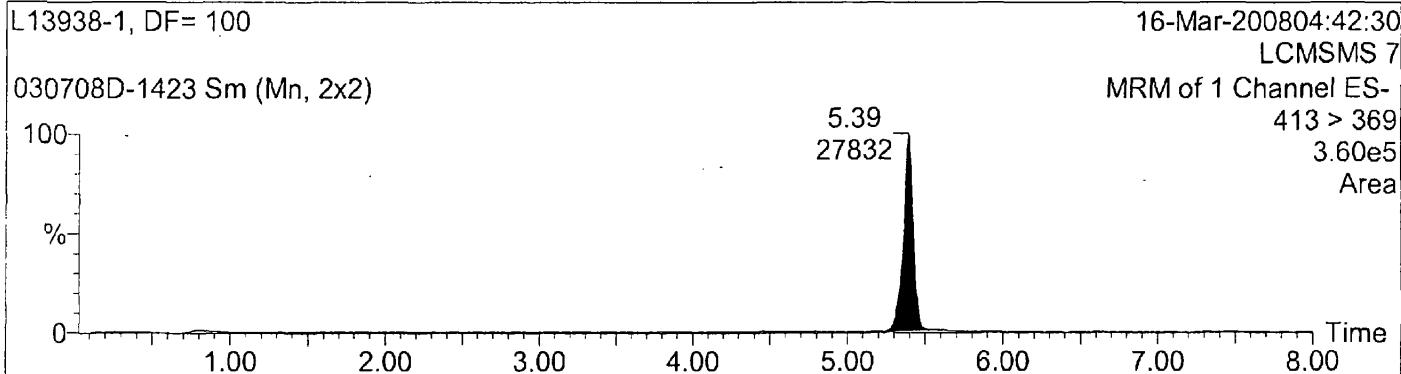
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1423

Text:

1: PFOA



Quantify Sample Report

Page 24

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

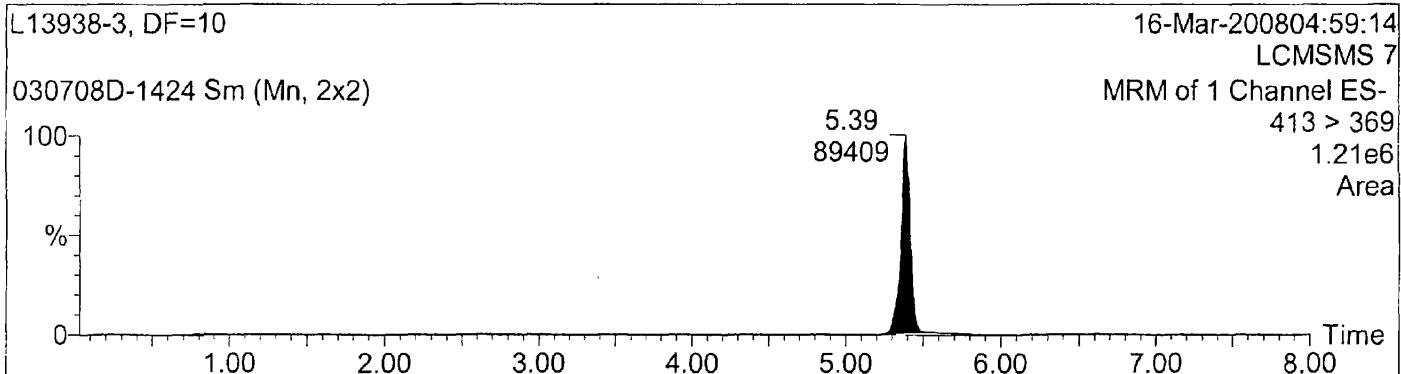
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1424

Text:

1: PFOA



Quantify Sample Report

Page 25

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

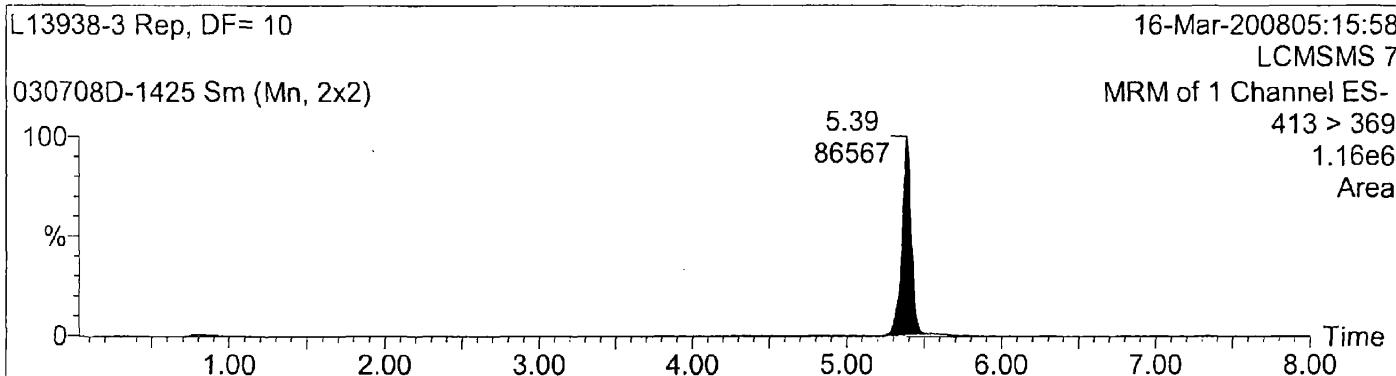
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1425

Text:

1: PFOA



Quantify Sample Report

Page 26

Study No: L13938, Set No: 030708D, Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

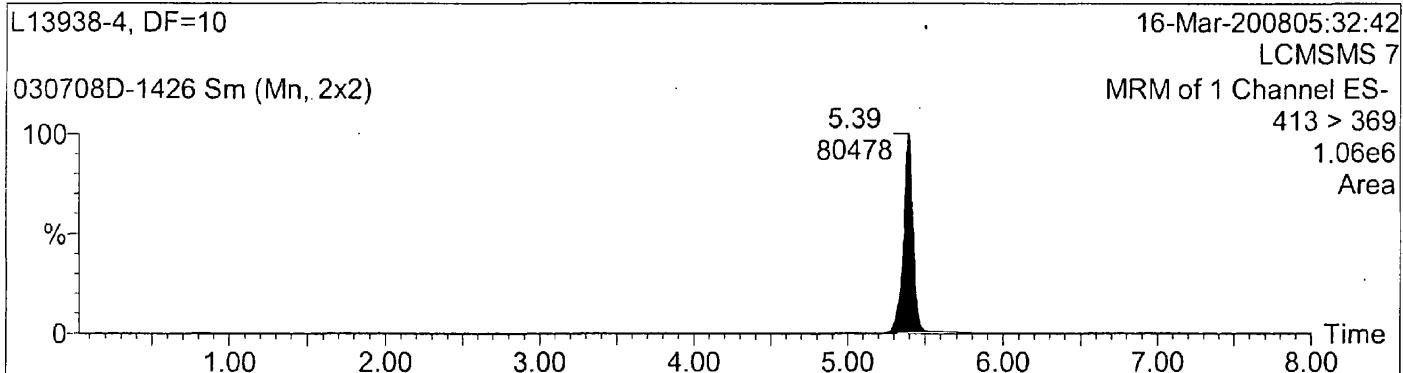
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1426

Text:

1: PFOA



Quantify Sample Report

Page 27

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

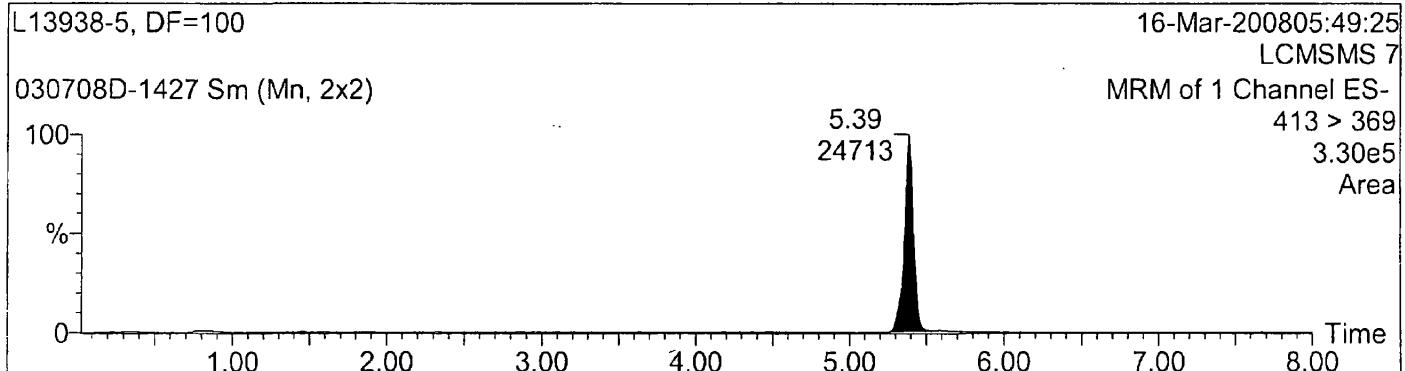
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1427

Text:

1: PFOA



Quantify Sample Report

Page 28

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

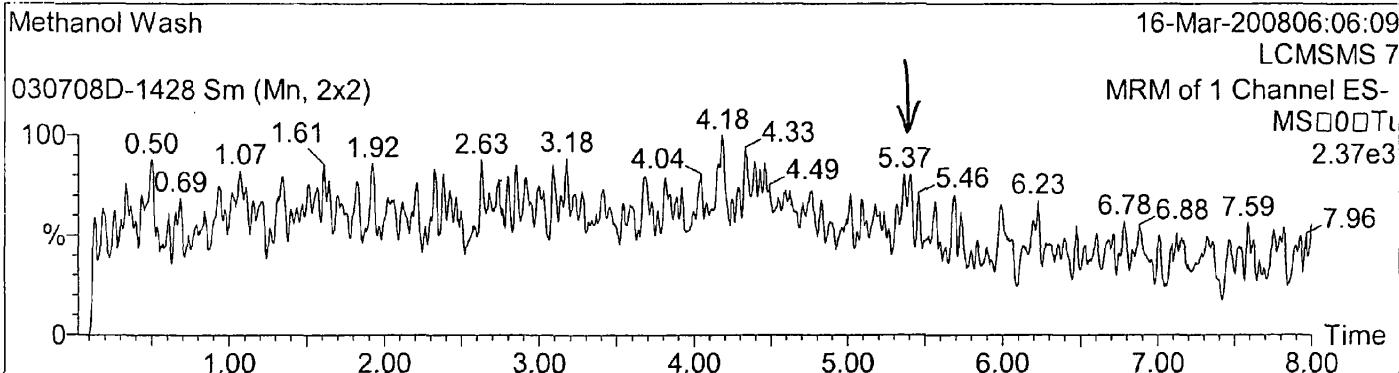
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1428

Text:

1: PFOA



Quantify Sample Report

Page 29

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

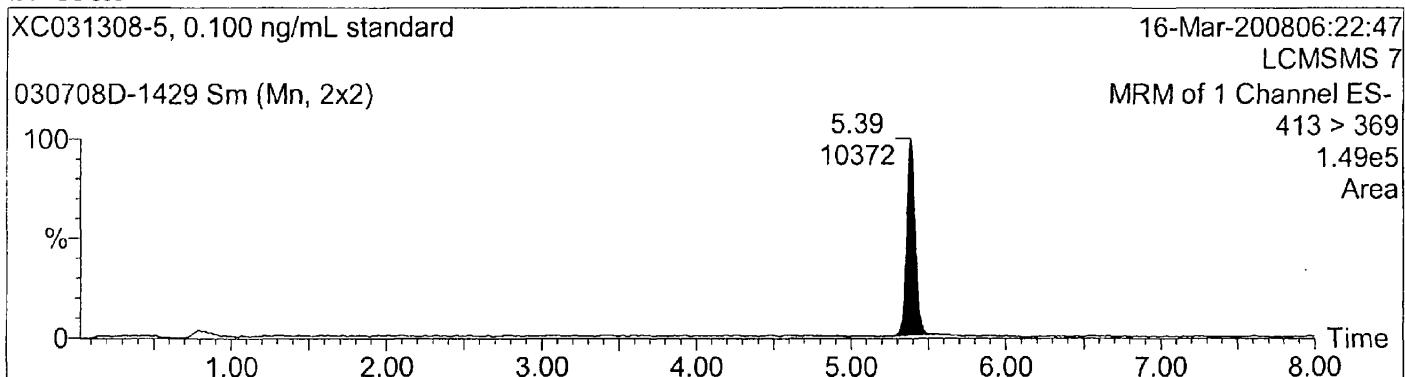
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1429

Text:

1: PFOA



Quantify Sample Report

Page 30

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

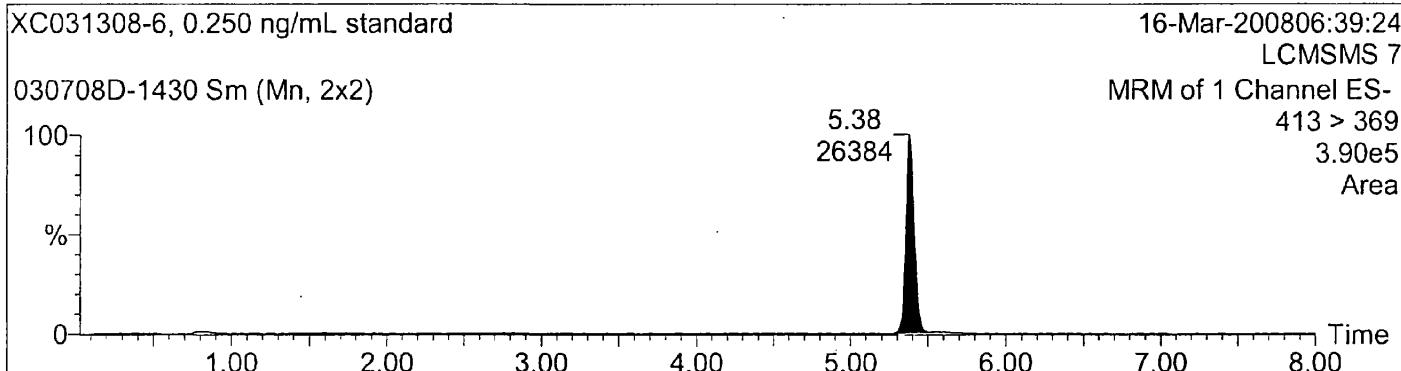
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1430

Text:

1: PFOA



Quantify Sample Report

Page 31

Study No: L13938, Set No: 030708D, Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

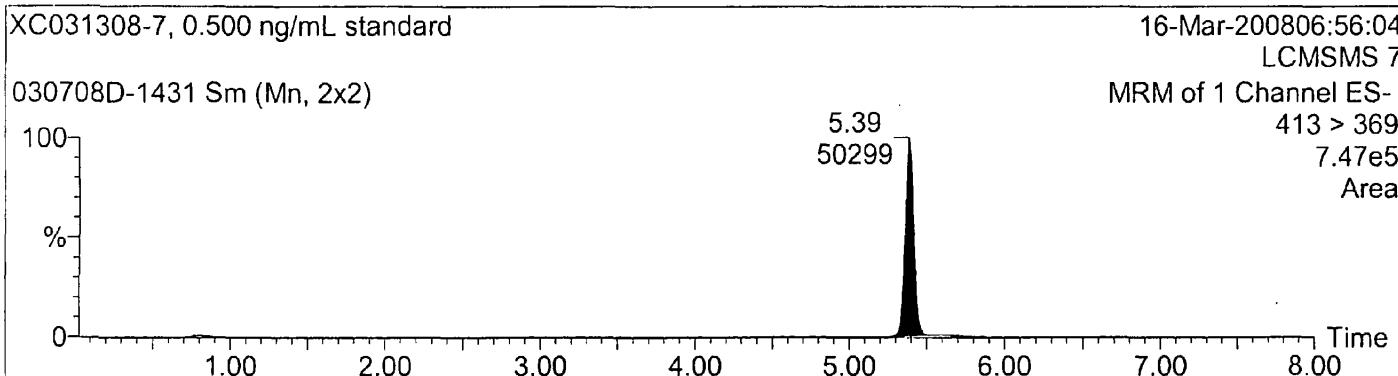
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1431

Text:

1: PFOA



Quantify Sample Report

Page 32

Study No: L13938, Set No: 030708D. Ext.Date: 03/07/08, Analyst: M. Cressley

Sample List: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\SampleDB\030708d

Last modified: Sun Mar 16 17:34:11 2008

Method: M:\Pharma\Data\LCMSMS7\Masslynx\008 APFO.PRO\MethDB\031608 PFOA

Last modified: Sun Mar 16 17:27:14 2008

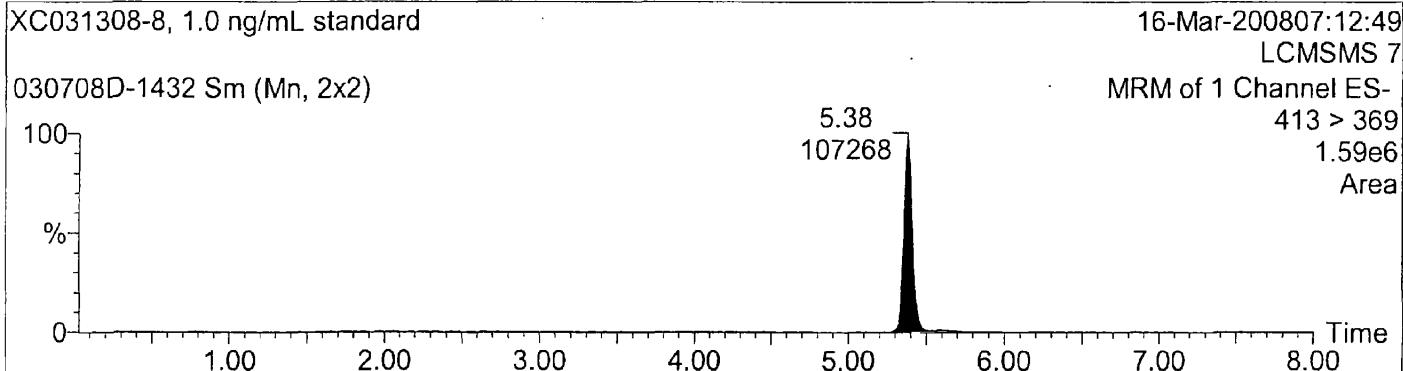
Job Code:

Printed: Mon Mar 17 12:18:02 2008

Name: 030708D-1432

Text:

1: PFOA





3058 Research Drive
State College, Pennsylvania 16801 USA
Telephone: 814.272.1039
Fax: 814.272.1019

The following pages are exact copies of information for the standards used in this study.

Pentadecafluoroctanoic acid (Inventory #: SP6567), obtained from Aldrich (lot # 00202TC) was used to make a stock solution (ID# SS23852), which in turn, was used to make intermediate solutions (ID#'s SS25198, SS25199, SS25200, SS25201 and SS25202). These intermediate solutions are used to prepare extracted calibration standards, laboratory control samples, and matrix spike samples.

Pentadecafluoroctanoic acid (Inventory #: SP8065), obtained from Oakwood Products Inc., Fluorochem USA (lot# Y16G) was used to make a stock solution (ID # SS23853), which in turn, was used to make intermediate solutions (ID#'s SS25195, SS25196 and SS25197). These intermediate solutions are used to prepare the check standard, which is designed as an independent source verification of the calibration standards.

The information of the following pages provides the exact sources, lot numbers, shipping information, expiration dates and storage conditions of the neat standards. Also included are the preparation of stock standard and fortification solution forms. These pages show the exact details of the preparation of each of the stock and fortification solutions, as well as their expiration dates and storage conditions.

SD 3/6/08

Standards - Primary

SP0006567 > 6602

Department: Analytical - State College
 Description: Pentadecafluoroctanoic Acid, PFOA
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 17146-8
 Lot #: 00202TC
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Recv'd: Room Temperature
 Condition Stored: Room Temperature - with Standards
 Current Location: B1-105
 Vendor: SIGMA-ALDRICH, INC.
 Company Name:
 Contact:
 Phone #:
 Notes: Sample was stored in its original packing until a C of A and expiration date was obtained from Sigma. CEE 10/26/05
 A new PFOA was purchased and received on 08/23/07 (SP9614) with the same lot number. The expiration date of SP6567 was extended for a year.

Aliquot - SP0006567

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
5	Balance 14		g		INITIAL		10/26/2005 11:08:04AM Edwards, Chrissy	P0001400
0		0.01040		Notes: Fluorochemical Neat g Balance 17	PREPARE	BALANCE8	11/30/2005 9:19:42AM Kralevs, Brittany	
0		0.104104		Notes: Prepare standards for DuPont. g Balance 32	PREPARE	BALANCE7	12/9/2005 11:31:13AM Smith, Jennifer	P0001622
0		0.10111		Notes: g Balance 17	PREPARE	BALANCE8	12/12/2005 11:13:57AM Sheehan, Amy	
0		0.0101		Notes: Prepared Standard for 008-APFO g Balance 17	PREPARE	BALANCE8	2/7/2006 10:42:00AM Crespi, Frances	
0		0.10111		Notes: Prepare Secondary Standards g Balance 17	PREPARE	BALANCE8	4/6/2006 11:02:48AM Sheehan, Amy	P0000418
0		0.01006		Notes: g Balance 17	PREPARE	BALANCE8	4/11/2006 3:30:50PM Ingram, Devon	

Y SD DATE 3/19/08

Department: Analytical - State College
 Description: Pentadecafluoroctanoic Acid, PFOA
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 17146-8
 Lot #: 00202TC
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Recv'd: Room Temperature
 Condition Stored: Room Temperature - with Standards
 Current Location: B1-105
 Vendor: SIGMA-ALDRICH, INC.
 Company Name:
 Contact:
 Phone #:
 Notes:

Sample was stored in its original packing until a C of A and expiration date was obtained from Sigma. CEE 10/26/05
 A new PFOA was purchased and received on 08/23/07 (SP9614) with the same lot number. The expiration date of SP6567 was extened for a year.

Aliquot - SP0006567, cont'd

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
				Notes: Prepare secondary standards				
		0.10112	g	Balance 17	PREPARE	BALANCE8	5/19/2006 11:32:31AM Sheehan, Amy	P0000418
				Notes:				
		0.10093	g	Balance 17	PREPARE	BALANCE8	6/7/2006 1:06:23PM Ingram, Devon	
				Notes: Prepare secondary standards				
		0.10112	g	Balance 17	PREPARE	BALANCE8	10/4/2006 9:47:56AM Sheehan, Amy	P0000418
				Notes:				
		0.010145	g	Balance 32	PREPARE	BALANCE7	10/10/2006 2:19:46PM Ingram, Devon	
				Notes: Prepare secondary standards for PFOA analysis				
		0.00682	g	Balance 30	ANALYSIS	BALANCE4	1/18/2007 9:15:05AM Sheehan, Amy	P0000418
				Notes: Used to make Sample.				
		0.07020	g	Balance 30	ANALYSIS	BALANCE4	1/18/2007 9:15:05AM Sheehan, Amy	P0000418
				Notes: Used to make Sample				
		0.10114	g	Balance 17	PREPARE	BALANCE8	2/6/2007 2:00:54PM Crespi, Frances	P0001622
				Notes:				
		0.010114	g	Balance 32	PREPARE	BALANCE7	3/19/2007 12:01:04PM Crespi, Frances	P0002709
				Notes:				
		0.10112	g	Balance 17	PREPARE	BALANCE8	3/28/2007 1:57:31PM Sheehan, Amy	P0000418
				Notes:				
		0.10117	g	Balance 17	PREPARE	BALANCE8	4/24/2007 10:37:49AM Baszczewski, Sara	P0001622
				Notes:				

Department: Analytical - State College
 Description: Pentadecafluoroctanoic Acid, PFOA
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 17146-8
 Lot #: 00202TC
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Rec'd: Room Temperature
 Condition Stored: Room Temperature - with Standards
 Current Location: B1-105
 Vendor: SIGMA-ALDRICH, INC.
 Company Name:
 Contact:
 Phone #:
 Notes:

Sample was stored in its original packing until a C of A and expiration date was obtained from Sigma. CEE 10/26/05
 A new PFOA was purchased and received on 08/23/07 (SP9614) with the same lot number. The expiration date of SP6567 was extended for a year.

Aliquot • SP0006567, cont'd

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
		0.10112	g	Balance 17	PREPARE	BALANCE8	4/24/2007 10:53:30AM Baszczewski, Sara	P0001622
			Notes:					
		0.01007	g	Balance 17	PREPARE	BALANCE8	5/7/2007 10:13:57AM Sheehan, Amy	
			Notes: Fluorochemical Projects					
		0.01007	g	Balance 17	PREPARE	BALANCE8	5/16/2007 8:01:45AM Sheehan, Amy	P0003150
			Notes:					
		0.39177	g	Balance 17	OTHER	BALANCE8	6/12/2007 9:13:23AM Sheehan, Amy	P0003150
			Notes: RETAINED FOR GLP					
		0.010114	g	Balance 32	PREPARE	BALANCE7	8/6/2007 8:47:13AM Neeley, Mark	P0003279
			Notes:					
		0.10112	g	Balance 17	PREPARE	BALANCE8	9/18/2007 8:34:48AM Sheehan, Amy	P000418
			Notes:					

Characterization • SP0006567

Purity	Date Characterized	Date Expires	Characterized By	Created By
98.9 %	12/01/2004	08/23/2008	Sigma-Aldrich	Edwards, Chrissy

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SIGMA-ALDRICH

Certificate of Analysis

Product Name	Pentadecafluoroctanoic acid, 96%
Product Number	171468
Product Brand	Aldrich
CAS Number	335-67-1
Molecular Formula	$\text{CF}_3(\text{CF}_2)_6\text{COOH}$
Molecular Weight	414.07

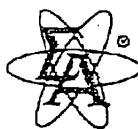
TEST	SPECIFICATION	LOT 00202TC RESULTS
APPEARANCE	WHITE TO OFF-WHITE POWDER	WHITE CRYSTALS
INFRARED SPECTRUM	CONFORMS TO STRUCTURE AND STANDARD AS	CONFORMS TO STRUCTURE.
TITRATION	95.5% - 104.5% (WITH NAOH)	101.6% (WITH NAOH)
GAS LIQUID CHROMATOGRAPHY	95.5% (MINIMUM)	98.9%
TITRATION	2 % H ₂ O (MAXIMUM)	NO H ₂ O DETECTED (WITH "KARL FISCHER" REAGENT)
QUALITY CONTROL		DECEMBER 2004
ACCEPTANCE DATE		

Ronnie J. Martin, Supervisor
Quality Control
Milwaukee, Wisconsin USA

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BY CEO DATE 10/24/05"

SP0006567

0067

**SIGMA-ALDRICH**

6000 N. Teutonia Ave.
Milwaukee, WI 53209 USA
Tel: (800) 558-9160 • (414) 438-3850
Fax: (800) 962-9591 • (414) 273-4979
e-mail: aldrich@sial.com

Date: October 26, 2005

Attn: Chrisy Edwards
Fax: 814-231-1580

In response to your request for the shelf life of Aldrich Product(s):

Aldrich Product Number: 17146-8
Description: Pentadecafluoroctanoic acid, 96%

Aldrich has not conducted specific tests for the shelf life under all conditions for this material. However, based on the history of our stock we find that this product should be stable for at least two years from the date of receipt, when stored tightly closed in the original container in which it was packaged and under the conditions listed on the label.

If we can be of any further assistance to you please feel free to contact me.

Sincerely,

Ronnie Martin
Chemist, Quality Control

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SP0006567

We are committed to the success of our Customers, Employees and Shareholders
through leadership in Life Science, High Technology, and Service.

RECEIVED TIME OCT.26. 10:10AM

PRINT TIME OCT.26. 10:11AM PAGE.01 **

0068



SP0006567



Allen Park Distribution Center
Aldrich Chemical Company, Inc.
6950 AMBASSADOR DRIVE
Allentown PA 18106

SHIP TO:

CHRISSEY EDWARDS
OXYGEN RESEARCH
3040 RESEARCH DR
STATE COLLEGE PA 16801
USA

PIN-394718

Customer Service 800-325-3010 • <http://www.sigma-aldrich.com>

PAGE	1 OF 1	DELIVERY #	820728515
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DATE	SOLD TO ACCT.	SOLD TO NAME	PURCHASE ORDER NUMBER	REFERENCE #
07/20/2005	49435591	OXYGEN RESEARCH	6891CE10	34309482

ROUTE	PERSON TO CONTACT	PHONE NUMBER
HL GROUND CA SHIPPING POINT	KENDRA LONG	8142318032

STOCK NO.	LOT NO.	ORDERED	SHIPPED	BACK ORD.	DESCRIPTION
171460-5G	00202TC	1	1	C	PENTADECALUOROOCTANOIC ACID, 96% COUNTRY OF OR: US Received OK CEE 10/21/05

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ALL SALES ARE EXPRESSLY LIMITED TO AND CONDITIONED UPON THE TERMS AND CONDITIONS APPEARING ON THE FRONT AND BACK OF THIS FORM.
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BY SC DATE Sept 08

0069

THIS PACKAGE CONFORMS TO 49 CFR 173.4

SP0006567

FROM: ALDRICH CHEMICAL CO
695B AMBASSADOR DR
ALLENTOWN, PA 18106
610-391-9107

WEIGHT(LBS)

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TO:	CEE	10/21/05	PIECES	1	
CHRISSEY EDWARDS OXYGEN RESEARCH 3048 RESEARCH DR STATE COLLEGE REF# B20728515			PA	ZIPCODE	16801

ORIGIN SHIPMENT NO. SHIP DATE
ABE 86700615783 10/20/05

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1 OF 1
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0070

Secondary StandardStandard Information

Standard: SS0023852
Category: Stock
Description: Pentadecafluorooctanoic Acid (PFOA) in Methanol (1000 ug/mL)
Solvent: Methanol
Quantity: 100 mL
Date Prepared: 9/18/2007 9:05:07AM
Date Expires: 3/18/2008 11:05:26AM
Storage Condition: Refrigerated
Preparation: Dissolve 0.10112 grams of PFOA in 100 mL of Methanol
ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002259 / Refrigerator 33 / CC0001940 / Sep 18, 2007 9:10:13AM
LOGIN / No Location / Sep 18, 2007 9:05:07AM

Component ConcentrationsPrepared From

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>	
Perfluoroctanoic Acid PFOA (TRIAL)	1000.08 µg/mL 1000.08 µg/mL	SP0006567 / Pentadecafluorooctanoic Acid, PFOA / Perfluoroctanoic Acid	0.10112 g	98.9 %
		SP0006567 / Pentadecafluorooctanoic Acid, PFOA / PFOA (TRIAL)	0.10112 g	98.9 %

Reagent: RE0035265 / METHANOL HPLC / Date Expires:
09/12/2009 100 mL

1200

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 (269) 668-4151 Fax

State College
 3058 Research Drive
 State College, PA 16801
 (814) 272-1039 Phone
 (814) 231-1580 Fax

Secondary Standard

Standard Information

Standard: SS0025198 Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluoroctanoic Acid (PFOA) in Methanol (100 ug/mL) Date Prepared: 12/14/2007 9:51:53AM
 Preparation: Dilute 10 mL of the 1000 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 9:52:36AM
 LOGIN / No Location / Dec 14, 2007 9:51:53AM Date Expires: 3/14/2008 11:05:26AM
 Storage Condition: Refrigerated

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>
Perfluorooctanoic Acid PFOA (TRIAL)	100.008 µg/mL 100.008 µg/mL

Prepared From

<u>Standard / Description</u>	<u>Aliquot</u>
SS0023852 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (1000 ug/mL) / Perfluorooctanoic Acid	10 mL
SS0023852 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (1000 ug/mL) / PFOA (TRIAL)	10 mL

Reagent: RE0036666 / METHANOL HPLC / Date Expires:
 12/05/2009

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 State College, PA 16801
 (814) 272-1039 Phone
 (814) 231-1580 Fax

Secondary Standard

Standard Information

Standard: SS0025199 Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluoroctanoic Acid (PFOA) in Methanol (10 ug/mL) Date Prepared: 12/14/2007 9:52:55AM
 Preparation: Dilute 10 mL of the 100 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 9:58:07AM
 LOGIN / No Location / Dec 14, 2007 9:52:55AM Date Expires: 3/14/2008 11:05:26AM
 Storage Condition: Refrigerated

Component Concentrations

Component	Concentration / Amount	Standard / Description	Aliquot
Perfluoroctanoic Acid PFOA (TRIAL)	10.0008 µg/mL 10.0008 µg/mL	SS0025198 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (100 ug/mL) / Perfluoroctanoic Acid	10 mL
		SS0025198 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (100 ug/mL) / PFOA (TRIAL)	10 mL

Reagent: RE0036666 / METHANOL HPLC / Date Expires:
 12/05/2009 90 mL

0023

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MPI
RESEARCH

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3058 Research Drive
State College, PA 16801
(814) 272-1039 Phone
(814) 231-1580 Fax

Secondary Standard

Standard Information

Standard: SS0025200 Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluoroctanoic Acid (PFOA) in Methanol (1.0 ug/mL) Date Prepared: 12/14/2007 9:58:30AM
 Preparation: Dilute 10 mL of the 10 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 9:59:30AM
 LOGIN / No Location / Dec 14, 2007 9:58:29AM Date Expires: 3/14/2008 11:05:26AM
 Storage Condition: Refrigerated

Component Concentrations

Component	Concentration / Amount	Standard / Description	Aliquot
Perfluoroctanoic Acid PFOA (TRIAL)	1.00008 µg/mL 1.00008 µg/mL	SS0025199 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (10 ug/mL) / Perfluoroctanoic Acid	10 mL
		SS0025199 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (10 ug/mL) / PFOA (TRIAL)	10 mL

Reagent: RE0036666 / METHANOL HPLC / Date Expires:
12/05/2009 90 mL

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4

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 (814) 231-1580 Fax

Secondary Standard

Standard Information

Standard: SS0025201 Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluoroctanoic Acid (PFOA) in Methanol (0.1 ug/mL) Date Prepared: 12/14/2007 9:59:45AM
 Preparation: Dilute 10 mL of the 1.0 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 10:00:29AM
 LOGIN / No Location / Dec 14, 2007 9:59:45AM Date Expires: 3/14/2008 11:05:26AM
 Storage Condition: Refrigerated

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluoroctanoic Acid PFOA (TRIAL)	0.100008 µg/mL 0.100008 µg/mL	SS0025200 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (1.0 ug/mL) / Perfluoroctanoic Acid SS0025200 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (1.0 ug/mL) / PFOA (TRIAL)	10 mL 10 mL
Reagent: RE0036666 / METHANOL HPLC / Date Expires: 12/05/2009	90 mL		1.00008 µg/mL 1.00008 µg/mL

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Secondary Standard

Standard Information

Standard:	SS0025202	Solvent:	Methanol
Category:	Fortification	Quantity:	100 mL
Description:	Pentadecafluorooctanoic Acid (PFOA) in Methanol (0.01 ug/mL)	Date Prepared:	12/14/2007 10:00:43AM
Preparation:	Dilute 10 mL of the 0.1 ug/mL to a final volume of 100 mL in methanol.	Date Expires:	3/14/2008 11:05:26AM
ICOC:	RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 10:01:35AM LOGIN / No Location / Dec 14, 2007 10:00:43AM	Storage Condition:	Refrigerated

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluorooctanoic Acid PFOA (TRIAL)	0.0100008 µg/mL 0.0100008 µg/mL	SS0025201 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (0.1 ug/mL) / Perfluorooctanoic Acid SS0025201 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (0.1 ug/mL) / PFOA (TRIAL)	10 mL 10 mL
Reagent: RE0036666 / METHANOL HPLC / Date Expires: 12/05/2009	90 mL		0.100008 µg/mL 0.100008 µg/mL

9200

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Standards - Primary

SP0008065 > 8102

Department: Analytical - State College
 Description: Pentadecafluorooctanoic Acid (C8 Acid - PFOA)
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 1319
 Lot #: Y16G
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Rec'd: Room Temperature
 Condition Stored: Refrigerated - with Standards
 Current Location: B1-105
 Vendor: OAKWOOD PRODUCTS, INC.
 Company Name:
 Contact:
 Phone #:
 Notes:

Date Received: 09/08/2006
 Expires: 9/8/2008 12:00:00AM
 Special: Unknown
 Flammable: Slightly combustible (above 200F)
 Health: Highly toxic
 Reactive: Unknown
 Gross: 16.54406
 Gross Units: g
 Net Balance: 2.43104
 Net Units: g

Aliquot - SP0008065

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
5			g		INITIAL		9/8/2006 10:58:07AM Gallant, Krista	P0002561
0			Notes:					
1		1.02041	g	Balance 14	ANALYSIS	BALANCE5	9/8/2006 11:28:37AM Gallant, Krista	P0002561
2		0.10205	g	Balance 17	PREPARE	BALANCE8	10/4/2006 10:07:35AM Sheehan, Amy	P0000418
3		1.02044	g	Balance 17	PREPARE	BALANCE8	3/1/2007 11:05:32AM Edwards, Chrissy	P0002561
4		0.10205	g	Balance 17	PREPARE	BALANCE8	3/28/2007 2:31:42PM Sheehan, Amy	P0000418
5		0.11990	g	Balance 17	OTHER	BALANCE8	5/3/2007 1:33:46PM Cleaver, Natalie	P0002561
6		0.10206	g	Balance 17	PREPARE	BALANCE8	8/30/2007 11:34:44AM Gallant, Krista	P0003267
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Description: Pentadecafluoroctanoic Acid (C8 Acid - PFOA)
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 1319
 Lot #: Y16G
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Rec'd: Room Temperature
 Condition Stored: Refrigerated - with Standards
 Current Location: B1-105
 Vendor: OAKWOOD PRODUCTS, INC.
 Company Name:
 Contact:
 Phone #:
 Notes:

Date Received: 09/08/2006
 Expires: 9/8/2008 12:00:00AM
 Special: Unknown
 Flammable: Slightly combustible (above 200F)
 Health: Highly toxic
 Reactive: Unknown
 Gross: 16.54406
 Gross Units: g
 Net Balance: 2.43104
 Net Units: g

Aliquot - SP0008065, cont'd

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
		0.10205	g	Balance 17	PREPARE	BALANCE8	9/18/2007 8:51:43AM Sheehan, Amy	P0000418

Notes:

Characterization - SP0008065

Purity	Date Characterized	Date Expires	Characterized By	Created By
98 %	09/08/2006	09/08/2008	Certificate of Analysis from Oakwood Products, Inc.	Gallant, Krista

0028

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Oakwood Products, Inc.

1741 Old Dunbar Road
West Columbia, SC 29172
Phone (803) 739-8800
Fax (803) 739-6957

CERTIFICATE OF ANALYSIS

Date: 18-May-05

Material: Pentadecafluorooctanoic acid

Cat.No.: 1319

Cas No.: [335-67-1]

Lot No.: Y16G

Assay: 98+% by NaOH Titration

We have stored this compound for years
at room temperature without encountering
problems with stability.

Appearance: White solid

Melting Point: 52-56°C

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BY Yumei Yang DATE 3/8/05

Yumei Yang
Yumei Yang
QC Manager

SP0008065

0079

OAKWOOD PRODUCTS, INC.
1741 OLD DUNBAR ROAD
WEST COLUMBIA, SC 29172
Phone: 803-739-8800 FAX: 803-739-6957

72752

O R D E R

BILL TO: Oxygen Research
3058 Research Drive
State College, PA 16801
(814) 231-8032

SHIP TO: Oxygen Research
Attn: CHRISSY EDWARDS
3048 Research Drive
State College, PA 16801
PO #8349CE10
(814) 231-8032

Page 1

CUST NO.	SALESMAN NO.	P. O. NUMBER	SHIPPING INSTRUCTIONS	COL	PPD	SHIP DATE	TERMS	INVOICE DATE
10926		8349CE10	OVT	X		09/05/06	net 30	09/05/06

QUANTITY ORDERED	QUANTITY SHIPPED	QUAN. I.D. ITEM NUMBER	DESCRIPTION
1	1	001269-25G	Heptafluorobutyric acid
1	1	003302-25G	n-Perfluoropentanoic acid
24	24	008504	Perfluorohexanoic acid
1	1	002261-5G	Perfluoroheptanoic acid
1	1	001319-5G	Pentadecafluoroctanoic acid
1	1	002263-25G	Heptadecafluorononanoic acid
1	1	002264-5G	Nonadecafluorodecanoic acid
1	1	002265-5G	Perfluoroundecanoic acid
1	1	002266-5G	Perfluorododecanoic acid

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CATHRYN O'LEARY
(803) 739-8800
OAKWOOD PRODUCTS LLC.
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3048 RESEARCH DRIVE
STATE COLLEGE PA 16801-2752

PA 168 0-10

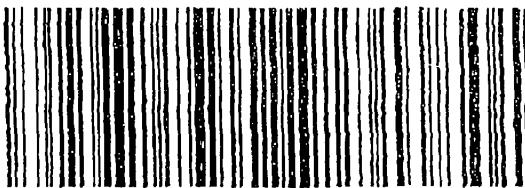


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DATE 3/8/08

Secondary StandardStandard Information

Standard: SS0023853 Solvent: Methanol
Category: Stock Quantity: 100 mL
Description: Pentadecafluoroctanoic Acid (PFOA) in Methanol (1000 ug/mL) Date Prepared: 9/18/2007 9:18:55AM
Storage Condition: Refrigerated
Date Expires: 3/18/2008 11:05:26AM
Preparation: Dissolve 0.10205 grams of PFOA in 100 mL of Methanol
ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002259 / Refrigerator 33 / CC0001940 / Sep 18, 2007 9:22:51AM
LOGIN / No Location / Sep 18, 2007 9:18:55AM

Component Concentrations

Component	Concentration / Amount	Standard / Description	Aliquot
PFOA (TRIAL)	1000.09 µg/mL	SP0008065 / Pentadecafluoroctanoic Acid (C8 Acid - PFOA) / PFOA (TRIAL)	0.10205 g
Reagent: RE0035265 / METHANOL HPLC / Date Expires: 09/12/2009	100 mL		98 %

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9/18/2007
Secondary Standard.rpt

DATE 9/18/08

Report Version: Aug 13 2007 10:08AM
Page 1 of 1

Instance: R0377422



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Secondary Standard

Standard Information

Standard:	SS0025195	Solvent:	Methanol
Category:	Fortification	Quantity:	100 mL
Description:	Pentadecafluoroctanoic Acid (PFOA) in Methanol (100 ug/mL) ALT	Date Prepared:	12/14/2007 9:46:22AM
		Date Expires:	3/14/2008 11:05:26AM
		Storage Condition:	Refrigerated
Preparation:	Dilute 10 mL of the 1000 ug/mL to a final volume of 100 mL in methanol.		
ICOC:	RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 9:47:54AM LOGIN / No Location / Dec 14, 2007 9:46:23AM		

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
PFOA (TRIAL)	100.009 µg/mL	SS0023853 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (1000 ug/mL) / PFOA (TRIAL)	10 mL
Reagent: RE0036666 / METHANOL HPLC / Date Expires: 12/05/2009	90 mL		1000.09 µg/mL

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Secondary Standard

Standard Information

Standard:	SS0025196	Solvent:	Methanol
Category:	Fortification	Quantity:	100 mL
Description:	Pentadecafluoroctanoic Acid (PFOA) in Methanol (1 ug/mL) ALT	Date Prepared:	12/14/2007 9:48:29AM
		Date Expires:	3/14/2008 11:05:26AM
		Storage Condition:	Refrigerated
Preparation:	Dilute 1 mL of the 100 ug/mL to a final volume of 100 mL in methanol.		
ICOC:	RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 9:50:01AM LOGIN / No Location / Dec 14, 2007 9:48:29AM		

Component Concentrations

Component	Concentration / Amount	Standard / Description	Aliquot
PFOA (TRIAL)	1.00009 µg/mL	SS0025195 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (100 ug/mL) ALT / PFOA (TRIAL)	1 mL
Reagent: RE0036666 / METHANOL HPLC / Date Expires: 12/05/2009	90 mL		100.009 µg/mL

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Secondary Standard

Standard Information

Standard:	SS0025197	Solvent:	Methanol
Category:	Fortification	Quantity:	100 mL
Description:	Pentadecafluorooctanoic Acid (PFOA) in Methanol (0.1 ug/mL) ALT	Date Prepared:	12/14/2007 9:50:24AM
Preparation:	Dilute 10 mL of the 1 ug/mL to a final volume of 100 mL in methanol.	Date Expires:	3/14/2008 10:29:38AM
ICOC:	RECEIVED / BB2-3rd Floor Lab / CC0001940 / Dec 14, 2007 9:51:20AM LOGIN / No Location / Dec 14, 2007 9:50:24AM	Storage Condition:	Refrigerated

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
PFOA (TRIAL)	0.100009 µg/mL	SS0025196 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (1 ug/mL) ALT / PFOA (TRIAL)	10 mL
Reagent: RE0036666 / METHANOL HPLC / Date Expires: 12/05/2009	90 mL		1.00009 µg/mL

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The following pages are exact copies of information for the standards used in this study.

Pentadecafluoroctanoic acid (Inventory #: SP6567), obtained from Aldrich (lot # 00202TC) was used to make a stock solution (ID# SS26513), which in turn, was used to make intermediate solutions (ID#'s SS26518, SS26519, SS26520, SS26521, and SS26522). These intermediate solutions are used to prepare extracted calibration standards, laboratory control samples, and matrix spike samples.

Pentadecafluoroctanoic acid (Inventory #: SP8065), obtained from Oakwood Products Inc., Fluorochem USA (lot# Y16G) was used to make a stock solution (ID # SS26514), which in turn, was used to make intermediate solutions (ID#'s SS26515, SS26516, and SS26517). These intermediate solutions are used to prepare the check standard, which is designed as an independent source verification of the calibration standards.

The information of the following pages provides the exact sources, lot numbers, shipping information, expiration dates and storage conditions of the neat standards. Also included are the preparation of stock standard and fortification solution forms. These pages show the exact details of the preparation of each of the stock and fortification solutions, as well as their expiration dates and storage conditions. *See 3/10/03*

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Standards - Primary

SP0006567 > 6602

Department: Analytical - State College
 Description: Pentadecafluorooctanoic Acid, PFOA
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 17146-8
 Lot #: 00202TC
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Recv'd: Ambient Temperature
 Condition Stored: Ambient Temperature - with Standards
 Current Location: B1-105
 Vendor: SIGMA-ALDRICH, INC.

Company Name:

Contact:

Phone #:

Notes:

Sample was stored in its original packing until a C of A and expiration date was obtained from Sigma. CEE 10/26/05
 A new PFOA was purchased and received on 08/23/07 (SP9614) with the same lot number. The expiration date of SP6567 was extened for a year.

Aliquot - SP0006567

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
5	Balance 14		g		INITIAL		10/26/2005 11:08:04AM Edwards, Chrissy	P0001400
		0.01040	g	Fluorochemical Neat Balance 17	PREPARE	BALANCE8	11/30/2005 9:19:42AM Kravets, Brittany	
100		0.104104	g	Prepare standards for DuPont. Balance 32	PREPARE	BALANCE7	12/9/2005 11:31:13AM Ammerman, Jennifer	P0001622
17		0.10111	g	Notes: Balance 17	PREPARE	BALANCE8	12/12/2005 11:13:57AM Sheehan, Amy	
		0.0101	g	Notes: Prepared Standard for 008-APFO Balance 17	PREPARE	BALANCE8	2/7/2006 10:42:00AM Crespi, Frances	
		0.10111	g	Notes: Prepare Secondary Standards Balance 17	PREPARE	BALANCE8	4/6/2006 11:02:48AM Sheehan, Amy	P0000418
		0.01006	g	Notes: COPY OF HE ORIGINAL DOCUMENT. Balance 17	PREPARE	BALANCE8	4/11/2006 3:30:50PM Kyle, Devon	



Department: Analytical - State College
 Description: Pentadecafluoroctanoic Acid, PFOA
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 17146-8
 Lot #: 00202TC
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Recv'd: Ambient Temperature
 Condition Stored: Ambient Temperature - with Standards
 Current Location: B1-105
 Vendor: SIGMA-ALDRICH, INC.
 Company Name:
 Contact:
 Phone #:
 Notes: Sample was stored in its original packing until a C of A and expiration date was obtained from Sigma. CEE 10/26/05
 A new PFOA was purchased and received on 08/23/07 (SP9614) with the same lot number. The expiration date of SP6567 was extended for a year.

Aliquot - SP0006567, cont'd

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
				Notes: Prepare secondary standards				
		0.10112	g	Balance 17	PREPARE	BALANCE8	5/19/2006 11:32:31AM Sheehan, Amy	P0000418
		0.10093	g	Balance 17	PREPARE	BALANCE8	6/7/2006 1:06:23PM Kyle, Devon	
				Notes: Prepare secondary standards				
		0.10112	g	Balance 17	PREPARE	BALANCE8	10/4/2006 9:47:56AM Sheehan, Amy	P0000418
				Notes:				
		0.010145	g	Balance 32	PREPARE	BALANCE7	10/10/2006 2:19:46PM Kyle, Devon	
				Notes: Prepare secondary standards for PFOA analysis				
		0.00682	g	Balance 30	ANALYSIS	BALANCE4	1/18/2007 9:15:05AM Sheehan, Amy	P0000418
				Notes: Used to make Sample.				
		0.07020	g	Balance 30	ANALYSIS	BALANCE4	1/18/2007 9:15:05AM Sheehan, Amy	P0000418
				Notes: Used to make Sample				
		0.10114	g	Balance 17	PREPARE	BALANCE8	2/6/2007 2:00:54PM Crespi, Frances	P0001622
				Notes:				
		0.010114	g	Balance 32	PREPARE	BALANCE7	3/19/2007 12:01:04PM Crespi, Frances	P0002709
				Notes:				
		0.10112	g	Balance 17	PREPARE	BALANCE8	3/28/2007 1:57:31PM Sheehan, Amy	P0000418
				Notes:				
		0.10117	g	Balance 17	PREPARE	BALANCE8	4/24/2007 10:37:49AM Baszczewski, Sara	P0001622
				Notes:				

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Department: Analytical - State College
 Description: Pentadecafluorooctanoic Acid, PFOA
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 17146-8
 Lot #: 00202TC
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Recv'd: Ambient Temperature
 Condition Stored: Ambient Temperature - with Standards
 Current Location: B1-105
 Vendor: SIGMA-ALDRICH, INC.
 Company Name:
 Contact:
 Phone #:
 Notes: Sample was stored in its original packing until a C of A and expiration date was obtained from Sigma. CEE 10/26/05
 A new PFOA was purchased and received on 08/23/07 (SP9614) with the same lot number. The expiration date of SP6567 was extended for a year.

Aliquot - SP0006567, cont'd

<u>Addition</u>	<u>Component</u>	<u>Withdrawal</u>	<u>Units</u>	<u>Component</u>	<u>Purpose</u>	<u>Computer</u>	<u>Created On / By</u>	<u>Project</u>
0006567		0.10112	g	Balance 17	PREPARE	BALANCE8	4/24/2007 10:53:30AM Baszczewski, Sara	P0001622
		0.01007	g	Balance 17	PREPARE	BALANCE8	5/7/2007 10:13:57AM Sheehan, Amy	
		0.01007	g	Notes: Fluorochemical Projects Balance 17	PREPARE	BALANCE8	5/16/2007 8:01:45AM Sheehan, Amy	P0003150
		0.39177	g	Balance 17	OTHER	BALANCE8	6/12/2007 9:13:23AM Sheehan, Amy	P0003150
		0.010114	g	Notes: RETAINED FOR GLP Balance 32	PREPARE	BALANCE7	8/6/2007 8:47:13AM Neeley, Mark	P0003279
		0.10112	g	Balance 17	PREPARE	BALANCE8	9/18/2007 8:34:48AM Sheehan, Amy	P0000418
		0.00018	g	Balance 17	ANALYSIS	BALANCE8	10/24/2007 1:54:26PM Sheehan, Amy	P0000418
		0.10114	g	Notes: Scan Balance 17	ANALYSIS	BALANCE8	3/13/2008 7:50:06AM Sheehan, Amy	P0000418
				Notes:				

Characterization - SP0006567

<u>Purity</u> 98.9 %	<u>Date Characterized</u> 12/01/2004	<u>Date Expires</u> 08/23/2008	<u>Characterized By</u> Sigma-Aldrich	<u>Created By</u> Edwards, Chrissy
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SIGMA-ALDRICH

Certificate of Analysis

Product Name Pentadecafluorooctanoic acid,
96%

Product Number 171468

Product Brand Aldrich

CAS Number 335-67-1

Molecular Formula $\text{CF}_3(\text{CF}_2)_6\text{COOH}$

Molecular Weight 414.07

TEST	SPECIFICATION	LOT 00202TC RESULTS
APPEARANCE	WHITE TO OFF-WHITE POWDER	WHITE CRYSTALS
INFRARED SPECTRUM	CONFORMS TO STRUCTURE AND STANDARD AS	CONFORMS TO STRUCTURE.
TITRATION	95.5% - 104.5% (WITH NAOH)	101.6% (WITH NAOH)
GAS LIQUID	95.5% (MINIMUM)	98.9%
CHROMATOGRAPHY		
TITRATION	2 % H ₂ O (MAXIMUM)	NO H ₂ O DETECTED(WITH "KARL FISCHER" REAGENT)
QUALITY CONTROL		DECEMBER 2004
ACCEPTANCE DATE		

Ronnie J. Martin, Supervisor
Quality Control
Milwaukee, Wisconsin USA

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BY SP0006567

0090

**SIGMA-ALDRICH**

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Milwaukee, WI 53209 USA
Tel: (800) 558-9160 • (414) 438-3850
Fax: (800) 962-9591 • (414) 273-4979
e-mail: aldrich@sial.com

Date: October 26, 2005

Attn: Chrisy Edwards
Fax: 814-231-1580

In response to your request for the shelf life of Aldrich Product(s):

Aldrich Product Number: 17146-8
Description: Pentadecafluoroctanoic acid, 96%

Aldrich has not conducted specific tests for the shelf life under all conditions for this material. However, based on the history of our stock we find that this product should be stable for at least two years from the date of receipt, when stored tightly closed in the original container in which it was packaged and under the conditions listed on the label.

If we can be of any further assistance to you please feel free to contact me.

Sincerely,

Ronnie Martin
Chemist, Quality Control

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SP0006567

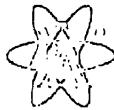
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PAGE	1 of 1	DELIVERY#	820728515
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DATE	SOLD TO ACCT.	SOLD TO NAME			PURCHASE ORDER NUMBER	REFERENCE #
10/20/2005	49435591	EXYGEN RESEARCH			6891CE10	34309482
DHL GROUND		KENDRA LONG			8142318032	
DHL GROUND FCA SHIPPING POINT	ROUTE	PERSON TO CONTACT			PHONE NUMBER	
STOCK NO.	LOT NO.	ORDERED	SHIPPED	BACK ORD.	DESCRIPTION	
171463-5G	00202TC	2	1	0	PENTADECAFLUOROOCTANOIC ACID, 96% COUNTRY OF OR: US	

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Secondary Standard

Standard Information

Standard: SS0026513 Solvent: Methanol
 Category: Stock Quantity: 100 mL
 Description: Pentadecafluorooctanoic Acid (PFOA) in Methanol (1000 ug/mL) Date Prepared: 3/13/2008 8:43:56AM
 Preparation: Dissolve 0.10114 grams of PFOA in 100 mL of Methanol.
 ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 8:50:12AM
 LOGIN / No Location / Mar 13, 2008 8:43:57AM

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluorooctanoic Acid	1000.27 µg/mL	SP0006567 / Pentadecafluorooctanoic Acid, PFOA /	0.10114 g
PFOA (TRIAL)	1000.27 µg/mL	Perfluorooctanoic Acid	98.9 %
		SP0006567 / Pentadecafluorooctanoic Acid, PFOA /	0.10114 g
		PFOA (TRIAL)	98.9 %

Reagent: RE0038273 / METHANOL HPLC / Date Expires: 100 mL
 03/06/2010

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Secondary Standard

Standard Information

Standard:	SS0026518	Solvent:	Methanol
Category:	Fortification	Quantity:	100 mL
Description:	Pentadecafluorooctanoic Acid (PFOA) in Methanol (100 ug/mL)	Date Prepared:	3/13/2008 8:59:16AM
Preparation:	Dilute 10 mL of the 1000 ug/mL to a final volume of 100 mL in methanol.	Date Expires:	6/13/2008 11:05:26AM
ICOC:	RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 9:00:21AM LOGIN / No Location / Mar 13, 2008 8:59:16AM	Storage Condition:	Refrigerated

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluorooctanoic Acid PFOA (TRIAL)	100.027 µg/mL 100.027 µg/mL	SS0026513 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (1000 ug/mL) / Perfluorooctanoic Acid	10 mL
		SS0026513 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (1000 ug/mL) / PFOA (TRIAL)	10 mL
Reagent: RE0038273 / METHANOL HPLC / Date Expires: 03/06/2010	90 mL		

600

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Secondary Standard

Standard Information

Standard: SS0026519 Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluoroctanoic Acid (PFOA) in Methanol (10 ug/mL) Date Prepared: 3/13/2008 9:00:33AM
 Preparation: Dilute 10 mL of the 100 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 9:01:27AM
 LOGIN / No Location / Mar 13, 2008 9:00:33AM

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluoroctanoic Acid PFOA (TRIAL)	10.0027 µg/mL 10.0027 µg/mL	SS0026518 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (100 ug/mL) / Perfluoroctanoic Acid	10 mL
		SS0026518 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (100 ug/mL) / PFOA (TRIAL)	10 mL

Reagent: RE0038273 / METHANOL HPLC / Date Expires:
 03/06/2010 90 mL

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Secondary Standard

Standard Information

Standard:	SS0026520	Solvent:	Methanol
Category:	Fortification	Quantity:	100 mL
Description:	Pentadecafluoroctanoic Acid (PFOA) in Methanol (1.0 ug/mL)	Date Prepared:	3/13/2008 9:01:40AM
		Date Expires:	6/13/2008 11:05:26AM
		Storage Condition:	Refrigerated
Preparation:	Dilute 10 mL of the 10 ug/mL to a final volume of 100 mL in methanol.		
ICOC:	RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 9:02:41AM LOGIN / No Location / Mar 13, 2008 9:01:39AM		

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluoroctanoic Acid PFOA (TRIAL)	1.00027 µg/mL 1.00027 µg/mL	SS0026519 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (10 ug/mL) / Perfluoroctanoic Acid	10 mL
		SS0026519 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (10 ug/mL) / PFOA (TRIAL)	10 mL

Reagent: RE0038273 / METHANOL HPLC / Date Expires:
03/06/2010 90 mL

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State College, PA 16801
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Secondary Standard

Standard Information

Standard: **SS0026521** Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluoroctanoic Acid (PFOA) in Methanol (0.1 ug/mL) Date Prepared: 3/13/2008 9:02:58AM
 Preparation: Dilute 10 mL of the 1.0 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 9:03:51AM
 LOGIN / No Location / Mar 13, 2008 9:02:58AM

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluoroctanoic Acid PFOA (TRIAL)	0.100027 µg/mL 0.100027 µg/mL	SS0026520 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (1.0 ug/mL) / Perfluoroctanoic Acid SS0026520 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (1.0 ug/mL) / PFOA (TRIAL)	10 mL
Reagent: RE0038273 / METHANOL HPLC / Date Expires: 03/06/2010	90 mL		10 mL
			1.00027 µg/mL

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Secondary Standard

Standard Information

Standard:	SS0026522	Solvent:	Methanol
Category:	Fortification	Quantity:	100 mL
Description:	Pentadecafluoroctanoic Acid (PFOA) in Methanol (0.01 ug/mL)	Date Prepared:	3/13/2008 9:04:06AM
		Date Expires:	6/13/2008 11:05:26AM
		Storage Condition:	Refrigerated
Preparation:	Dilute 10 mL of the 0.1 ug/mL to a final volume of 100 mL in methanol.		
ICOC:	RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 9:05:04AM LOGIN / No Location / Mar 13, 2008 9:04:06AM		

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
Perfluoroctanoic Acid PFOA (TRIAL)	0.0100027 µg/mL 0.0100027 µg/mL	SS0026521 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (0.1 ug/mL) / Perfluoroctanoic Acid	10 mL
		SS0026521 / Pentadecafluoroctanoic Acid (PFOA) in Methanol (0.1 ug/mL) / PFOA (TRIAL)	10 mL
Reagent: RE0038273 / METHANOL HPLC / Date Expires: 03/06/2010	90 mL		0.100027 µg/mL

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Standards - Primary

SP0008065 > 8102

Department: Analytical - State College
 Description: Pentadecafluorooctanoic Acid (C8 Acid - PFOA)
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 1319
 Lot #: Y16G
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Recv'd: Ambient Temperature
 Condition Stored: Refrigerated - with Standards
 Current Location: B1-105
 Vendor: OAKWOOD PRODUCTS, INC.
 Company Name:
 Contact:
 Phone #:
 Notes:

Date Received: 09/08/2006
 Expires: 9/8/2008 12:00:00AM
 Special: Unknown
 Flammable: Slightly combustible (above 200F)
 Health: Highly toxic
 Reactive: Unknown
 Gross: 15.02570
 Gross Units: g
 Net Balance: 2.22678
 Net Units: g

Aliquot - SP0008065

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
5			g		INITIAL		9/8/2006 10:58:07AM Gallant, Krista	P0002561
		1.02041	g	Balance 14	ANALYSIS	BALANCE5	9/8/2006 11:28:37AM Gallant, Krista	P0002561
		0.10205	g	Balance 17	PREPARE	BALANCE8	10/4/2006 10:07:35AM Sheehan, Amy	P0000418
		1.02044	g	Balance 17	PREPARE	BALANCE8	3/1/2007 11:05:32AM Edwards, Chrissy	P0002561
		0.10205	g	Balance 17	PREPARE	BALANCE8	3/28/2007 2:31:42PM Sheehan, Amy	P0000418
		0.11990	g	Balance 17	OTHER	BALANCE8	5/3/2007 1:33:46PM Cleaver, Natalie	P0002561
		0.10206	g	Balance 17	PREPARE	BALANCE8	8/30/2007 11:34:44AM Gallant, Krista	P0003267

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 Report Version: Sep 5 2007 8:37AM
 Page 1 of 2

Instance:

R0421571



Department: Analytical - State College
 Description: Pentadecafluoroctanoic Acid (C8 Acid - PFOA)
 Type: Routine
 Sponsor Contact:
 Matrix: Solids (Gravimetric)
 Catalog #: 1319
 Lot #: Y16G
 CAS #: 335-67-1
 Solvent: NONE
 Removed: False
 Condition Recv'd: Ambient Temperature
 Condition Stored: Refrigerated - with Standards
 Current Location: B1-105
 Vendor: OAKWOOD PRODUCTS, INC.
 Company Name:
 Contact:
 Phone #:
 Notes:

Aliquot - SP0008065, cont'd

Addition	Component	Withdrawal	Units	Component	Purpose	Computer	Created On / By	Project
		0.10205	g	Balance 17	PREPARE	BALANCE8	9/18/2007 8:51:43AM Sheehan, Amy	P0000418
		0.00021	g	Balance 17	ANALYSIS	BALANCE8	10/24/2007 2:04:01PM Sheehan, Amy	P0000418
		0.10205	g	Balance 17	PREPARE	BALANCE8	2/14/2008 11:59:07AM Edwards, Chrissy	P0003267
		0.10200	g	Balance 17	PREPARE	BALANCE8	3/13/2008 8:10:26AM Sheehan, Amy	P0000418
				Notes: Stock for fluorochemicals				
				Notes: Stock for Fluorochemicals				

Characterization - SP0008065

Purity	Date Characterized	Date Expires	Characterized By	Created By
98 %	09/08/2006	09/08/2008	Certificate of Analysis from Oakwood Products, Inc.	Gallant, Krista

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OAKWOOD PRODUCTS, INC.
1741 OLD DUNBAR ROAD
WEST COLUMBIA, SC 29172
Phone: 803-739-8800 FAX: 803-739-6957

72752

O R D E R

BILL TO: Oxygen Research
3058 Research Drive
State College, PA 16801
(814) 231-8032

SHIP TO: Oxygen Research
Attn: CHRISSY EDWARDS
3048 Research Drive
State College, PA 16801
PO #8349CE10
(814) 231-8032

Page 1

CUST NO.	SALESMAN NO.	P. O. NUMBER	SHIPPING INSTRUCTIONS	COL	PPD	SHIP DATE	TERMS	INVOICE DATE
10926		8349CE10	OVT	X		09/05/06	net 30	09/05/06
QUANTITY ORDERED	QUANTITY SHIPPED	QUAN. B.Q.	ITEM NUMBER	DESCRIPTION				
1	1		001269-25G	Heptafluorobutyric acid				
1	1		003302-25G	n-Perfluoropentanoic acid				
24	24		008504	Perfluorohexanoic acid				
1	1		002261-5G	Perfluoroheptanoic acid				
1	1		001319-5G	Pentadecafluoroctanoic acid				
1	1		002263-25G	Heptadecafluorononanoic acid				
1	1		002264-5G	Nonadecafluorodecanoic acid				
1	1		002265-5G	Perfluoroundecanoic acid				
1	1		002266-5G	Perfluorododecanoic acid				

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SP 0008065

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BELONGS TO

CATHRYN O'LEARY
(803) 739-8800
OAKWOOD PRODUCTS, INC.
1741 OLD DUNBAR ROAD
WEST COLUMBIA SC 29172

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STATE COLLEGE PA 16801-2752

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PA 168 0-10



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TRACKING #: 1Z 293 6E7 02 4143 7366

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DATE 11/11/06

Oakwood Products, Inc.

1741 Old Dunbar Road
West Columbia, SC 29172
Phone (803) 739-8800
Fax (803) 739-6957

CERTIFICATE OF ANALYSIS

Date: 18-May-05

Material: Pentadecafluorooctanoic acid

Cat.No.: 1319

Cas No.: [335-67-1]

Lot No.: Y16G

Assay: 98+% by NaOH Titration

We have stored this compound for years
at room temperature without encountering
problems with stability.

Appearance: White solid

Melting Point: 52-56°C

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BY SC

Yumei Yang
Yumei Yang
QC Manager

SP0008065

0104



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Secondary Standard

Standard Information

Standard:	SS0026514	Solvent:	Methanol
Category:	Stock	Quantity:	100 mL
Description:	Pentadecafluorooctanoic Acid (PFOA) in Methanol (1000 ug/mL)	Date Prepared:	3/13/2008 8:50:37AM
Preparation:	Dissolve 0.10200 grams of PFOA in 100 mL of Methanol		
ICOC:	RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 8:53:46AM LOGIN / No Location / Mar 13, 2008 8:50:37AM		

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
PFOA (TRIAL)	999.6 µg/mL	SP0008065 / Pentadecafluorooctanoic Acid (C8 Acid - PFOA) / PFOA (TRIAL)	0.102 g
Reagent: RE0038273 / METHANOL HPLC / Date Expires: 03/06/2010	100 mL		98 %

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Secondary Standard

Standard Information

Standard: SS0026515 Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluorooctanoic Acid (PFOA) in Methanol (100 ug/mL) ALT Date Prepared: 3/13/2008 8:54:09AM
 Storage Condition: Refrigerated
 Preparation: Dilute 10 mL of the 1000 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 8:55:34AM
 LOGIN / No Location / Mar 13, 2008 8:54:09AM

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
PFOA (TRIAL)	99.96 µg/mL	SS0026514 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (1000 ug/mL) / PFOA (TRIAL)	10 mL
Reagent: RE0038273 / METHANOL HPLC / Date Expires: 03/06/2010	90 mL		999.6 µg/mL

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Secondary Standard

Standard Information

Standard: **SS0026516** Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluorooctanoic Acid (PFOA) in Methanol (1 ug/mL) ALT Date Prepared: 3/13/2008 8:55:54AM
 Date Expires: 6/13/2008 11:05:26AM
 Storage Condition: Refrigerated

Preparation: Dilute 1 mL of the 100 ug/mL to a final volume of 100 mL in methanol.

ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 8:57:09AM
 LOGIN / No Location / Mar 13, 2008 8:55:54AM

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
PFOA (TRIAL)	0.9996 µg/mL	SS0026515 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (100 ug/mL) ALT / PFOA (TRIAL)	1 mL
Reagent: RE0038273 / METHANOL HPLC / Date Expires: 03/06/2010	90 mL		99.96 µg/mL

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Secondary Standard

Standard Information

Standard: SS0026517 Solvent: Methanol
 Category: Fortification Quantity: 100 mL
 Description: Pentadecafluorooctanoic Acid (PFOA) in Methanol (0.1 ug/mL) ALT Date Prepared: 3/13/2008 8:57:21AM
 Preparation: Dilute 10 mL of the 1 ug/mL to a final volume of 100 mL in methanol.
 ICOC: RECEIVED / BB2-105 / IN0000709 / Refrigerator 33 / D0002262 / I Series Data Logger / CC0001940 / Mar 13, 2008 8:58:57AM
 LOGIN / No Location / Mar 13, 2008 8:57:21AM Date Expires: 6/13/2008 10:29:38AM
 Storage Condition: Refrigerated

Component Concentrations

<u>Component</u>	<u>Concentration / Amount</u>	<u>Standard / Description</u>	<u>Aliquot</u>
PFOA (TRIAL)	0.09996 µg/mL	SS0026516 / Pentadecafluorooctanoic Acid (PFOA) in Methanol (1 ug/mL) ALT / PFOA (TRIAL)	10 mL
Reagent: RE0038273 / METHANOL HPLC / Date Expires: 03/06/2010	90 mL		0.9996 µg/mL

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